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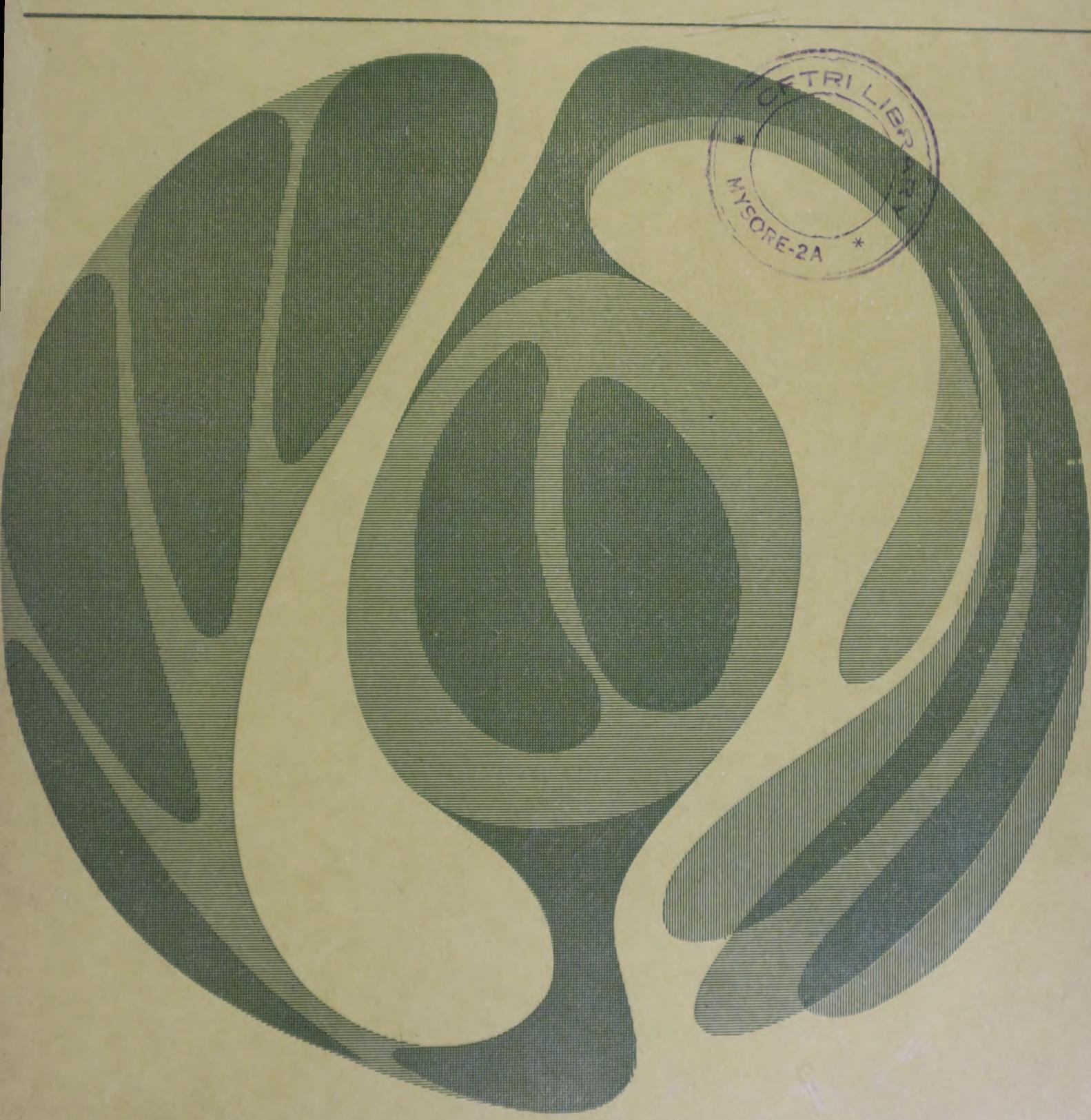


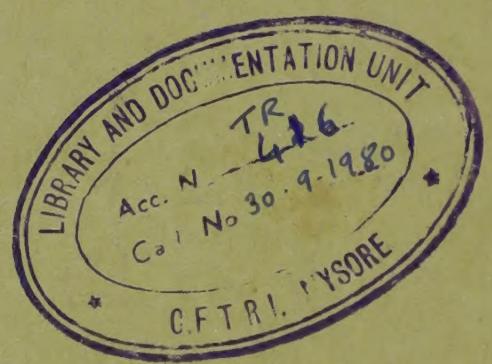




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The market for rapeseed and its products in Western Europe with particular reference to the UK





Tropical Products Institute

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Jess-Mary K. Bell

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Summaries

SUMMARY

The market for rapeseed and its products in Western Europe with particular reference to the UK

1. The oilseed rape is derived from species of the genus *Brassica* and for the purposes of this report the species referred to as rapeseed are *B. napus* and *B. campestris*.
2. Rapeseed is primarily a temperate crop and is one of a number of oilseeds grown for the purpose of securing oil and meal. Its oil content averages 42% and the oilcake content about 57%. The oilcake has an average protein content of 39%. World production of rapeseed was 7 million tonnes in 1973. Major producing areas are Canada, India, the People's Republic of China and Europe.
3. World trade in rapeseed has expanded rapidly since the early 1960's and in 1973 exports of rapeseed were over 1.7 million tonnes. Canadian exports dominate world trade and run at over 1 million tonnes a year. France and the Federal Republic of Germany (hereafter called West Germany) account for a further 200 000 tonnes of the rapeseed entering world trade in normal years.
4. There is also some trade in rapeseed products, although most of these are produced for consumption in the major markets for rapeseed, which have large seed-crushing industries. In 1973, exports of rapeseed oil from the main primary producing countries were 247 000 tonnes, Western Europe being the major consumer. World exports of rapeseed meal were 378 000 tonnes in 1973. Western Europe is the major supplier and importer of rapeseed meal, a situation which has arisen because of intra-European Economic Community trade.
5. The United Kingdom market for rapeseed was 121 000 tonnes in 1974. Until the mid-1960's the UK was totally dependent on imported supplies of rapeseed, but the oilseed is now being cultivated by UK farmers and home-produced supplies account for an increasing share of total supplies. Because of the support given to the production of oilseed crops within the EEC, UK domestic production of rapeseed is expected to continue to expand.
6. The major external suppliers of rapeseed to the UK are Canada, Poland, Denmark, France, West Germany and the Netherlands. In 1972 Canada supplied 10 000 tonnes; the Netherlands 28 000 tonnes; and Sweden, which is not a consistent source of supply 55 000 tonnes, making it the largest single supplier.
7. The price of rapeseed rose steadily over the period covered by the report, but gathered momentum after 1970. In 1973, when prices of all oilseeds

shifted upwards, the price of rapeseed rose to an unprecedented level of £84/tonne in the first quarter of 1973. This trend continued in 1974 and by April, Canadian rapeseed (40 per cent oil content) was quoted at £185/tonne.

8. The products of rapeseed are the oil and meal. Rapeseed oil is widely used as an ingredient in margarines, compound cooking fats and cooking oil. However, its use in these outlets is limited because of the oil's erucic acid content. In 1974 some 412 000 tonnes of vegetable and marine oils and animal fat were used in margarine and compound cooking fat. The use of rapeseed oil in these products was 21 000 tonnes. It is estimated that a further 25 000 tonnes of rapeseed oil are used in liquid edible oils and that the remainder of supplies is used in technical applications. When used as an industrial oil it is essential that the erucic acid content of the oil is at least 40%, a level which is unacceptable in edible uses.
9. Until 1973 rapeseed oil normally sold at a discount of about £6/tonne to its nearest competitor, soyabean oil. In 1974 the accepted price relationship became distorted largely as a result of an Italian ban on the use of rapeseed oil because of its erucic acid content. By September 1974, the price of rapeseed oil ex-store was £390/tonne and that of soyabean oil £460/tonne.
10. Rapeseed meal, like rapeseed oil, has quality factors which limit its use in animal feed formulations. The limit to rapeseed meal is imposed by the presence of glucosinolates in the meal which, when activated, can have toxic effects. Processing can eliminate the activating enzyme to some extent, but seed-breeding programmes have developed varieties in which the toxic elements have been more or less eliminated. At the present time the upper limits of inclusion of rapeseed meal in animal feed are recommended at: adult cattle 10%, fattening pigs 5%, laying hens 3% and broilers 10%.
11. The consumption of rapeseed meal in the UK in 1973 was 140 000 tonnes, of which 52% was provided for by meal imports. The major suppliers of rapeseed meal to the UK are Algeria, Pakistan, France, West Germany and Italy.
12. Rapeseed meal is bought as a source of protein and its price therefore reflects its value as such, compared with that from other sources. In practice, rapeseed meal sells at a discount to other protein sources, notably soyabean meal. However, if prices are compared on a price per 1% protein basis they are found to be very close. A sharp increase in rapeseed meal prices took place in 1973 and early 1974 because of the reduction in soya-bean and fish meal supplies. In August 1974, the price of rapeseed meal was £74/tonne.
13. Rapeseed oil and meal are part of a highly competitive market because of the degree of interchangeability between oilseed products. Rapeseed oil competes mainly with soyabean, groundnut, sunflowerseed, cottonseed and sesame oil. Rapeseed meal competes with protein sources, such as other vegetable oilcakes, synthetic amino-acids and urea.
14. Within the UK the major part of the processing of and trading in rapeseed and rapeseed products is handled by a few large firms. In the rapeseed meal trade brokers and middlemen have maintained their position to the greatest extent.
15. The EEC market (of the original six members) is of importance because of the encouragement given to the production of rapeseed under the Common Agricultural Policy. By 1972, EEC production of rapeseed was over 1 million tonnes, with France producing over 720 000 tonnes. Total EEC utilisation of rapeseed in 1972 was 1.2 million tonnes. The major importer was Italy. Trade in rapeseed products in the EEC is characterised by the degree of intra-Community trade. The two largest markets for rapeseed oil

are France and Italy and those for rapeseed meal are France and West Germany, although in 1972 the Netherlands replaced West Germany as the second largest market for rapeseed meal in the EEC.

16. Imports of rapeseed and rapeseed meal are generally free of duty to the markets studied in the report. Imports of rapeseed oil usually face some tariff barrier.
17. Rapeseed is primarily a temperate crop; in 1972 developing countries accounted for only 29% of world production. Amongst the temperate producers, the UK is the only country where production is expected to expand rapidly. Because of the presence of erucic acid in rapeseed oil and glucosinolates in the meal, the future of rapeseed depends on the successful elimination of these undesirable elements. In January 1975 further impetus was given to this by an announcement from an EEC Committee recommending the use of rapeseed oils with low levels of long chain fatty acids, when the oils were for human consumption. In fact, the development of low or zero erucic strains of rapeseed is already well under way, with Canada leading the switch to cultivation of these strains. The development of low glucosinolate strains is not quite so advanced but, by 1980, if research progresses as planned, low erucic, low glucosinolate strains should be commercially available. The other threat to the future of rapeseed is competition from other oilseed products. The main competitors are palm oil, soyabeans and sunflowerseed. Some sources feel that soyabeans or sunflowerseed may offer better prospects to new producers but if, given all other factors, rapeseed remains the only viable oilseed possibility for a country, there would appear to be no reason to restrict development programmes if its production is competitive. However, a close watch will have to be kept on market trends.

RESUME

Le marché des graines de colza et de leurs produits en Europe Occidentale avec référence particulière au Royaume-Uni

1. Le colza à graines oléagineuses dérive d'espèces du genre *Brassica* et pour l'objet de ce rapport, les espèces désignées comme graines de colza sont *B. napus* et *B. campestris*.
2. Les graines de colza sont essentiellement une récolte de pays tempérés et elles font partie d'un certain nombre de graines oléagineuses cultivées pour la production d'huile et de farine. Leur teneur en huile est d'environ 42% et la teneur en tourteau d'environ 57%. Le tourteau a une teneur moyenne en protéines de 39%. La production mondiale de graines de colza était de 7 millions de tonnes en 1973. Les principales régions productrices sont le Canada, l'Inde, la République Populaire de Chine et l'Europe.
3. Le marché mondial de graines de colza s'est étendu rapidement depuis le début des années 60 et en 1973 les exportations de graines de colza étaient supérieures à 1,7 million de tonnes. Les exportations canadiennes prédominent sur le marché mondial et atteignent plus de 1 million de tonnes par an. La France et la République fédérale allemande (désignée plus loin par Allemagne) ont à leur actif 200.000 tonnes des graines de colza entrant sur le marché mondial dans les années normales.
4. Il existe également un certain commerce de produits des graines de colza, bien que la plupart de ceux-ci soient produits pour la consommation sur les principaux marchés de graines de colza qui possèdent d'importantes industries de broyage de graines. En 1973, les exportations d'huile de colza des principaux pays producteurs ont été de 247.000 tonnes, l'Europe

occidentale étant le principal consommateur. Les exportations mondiales de farine de colza ont été de 378.000 tonnes en 1973, l'Europe occidentale est le principal fournisseur et le principal importateur de farine de colza, situation qui s'est créée à cause du commerce intérieur de la Communauté Economique Européenne.

5. Le marché du Royaume-Uni pour les graines de colza était de 121.000 tonnes en 1974. Jusqu'au milieu des années 60, le Royaume-Uni dépendait totalement des importations de graines de colza, mais ces graines oléagineuses sont maintenant cultivées par les cultivateurs du Royaume-Uni et les approvisionnements de la production indigène représentent une part croissante des approvisionnements totaux. En raison de l'appui accordé à la production des récoltes de graines oléagineuses à l'intérieur de la Communauté Economique Européenne, on s'attend à ce que la production indigène de graines de colza du Royaume-Uni continue à se développer.
6. Les principaux fournisseurs extérieurs de graines de colza au Royaume-Uni sont le Canada, la Pologne, le Danemark, la France, l'Allemagne et les Pays-Bas. En 1972, le Canada a fourni 10.000 tonnes; les Pays-Bas 28.000 tonnes, et la Suède, qui n'est pas une source d'approvisionnement régulière, a fourni 55.000 tonnes, ayant été ainsi le plus important fournisseur.
7. Le prix des graines de colza n'a cessé d'augmenter au cours de la période couverte par le rapport, mais sa montée s'est accélérée après 1970. En 1973, lorsque les cours de toutes les graines oléagineuses se sont déplacés vers le haut, le prix des graines de colza est monté à un niveau sans précédent de £84/tonne dans le premier trimestre de 1973. Cette tendance s'est poursuivie en 1974 et au mois d'avril, les graines de colza du Canada (teneur en huile 40 pour cent) étaient cotées à £185/tonne.
8. Les produits des graines de colza sont l'huile et la farine. L'huile de colza est largement utilisée comme ingrédient dans les margarines, les matières grasses composées de cuisine et l'huile de cuisine. Toutefois, son utilisation dans ces débouchés est limitée à cause de la teneur de l'huile en acide érucique. En 1974, près de 412.000 tonnes d'huiles végétales et de poissons et de graisse animale ont été utilisées dans la margarine et la matière grasse composée de cuisine. L'utilisation d'huile de colza dans ces produits a été de 21.000 tonnes. On estime que 25.000 de plus tonnes d'huile de colza sont utilisées dans les huiles comestibles liquides et que le reste des approvisionnements est utilisé dans des applications techniques. Lorsqu'elle est utilisée comme huile industrielle, il est essentiel que sa teneur en acide érucique soit d'au moins 40%, taux inacceptable pour les emplois dans les produits comestibles.
9. Jusqu'en 1973, l'huile de colza se vendait normalement avec un rabais de £6/tonne par rapport à son produit de compétition le plus proche, l'huile de soja. En 1974, la relation des cours admis a été faussée surtout comme conséquence d'une interdiction proclamée par l'Italie de l'utilisation d'huile de colza à cause de sa teneur en acide érucique. En septembre 1974, le prix de l'huile de colza ex-store était de £390/tonne et celui de l'huile de soja de £460/tonne.
10. La farine de colza, comme l'huile de colza, a des facteurs de qualité qui restreignent son utilisation dans les formulations d'aliments pour animaux. La restriction à la farine de colza est imposée par la présence de glucosinolates dans la farine qui, lorsqu'ils sont activés peuvent avoir des effets toxiques. Le traitement peut éliminer dans une certaine mesure l'enzyme d'activation, mais des programmes de reproduction de graines ont développé des variétés dans lesquelles les éléments toxiques ont été plus ou moins éliminés. Actuellement, les limites supérieures d'inclusion de farine de colza dans les aliments pour animaux sont recommandées comme suit: bétail adulte 10%, porcs d'engraissement 5%, poules pondeuses 3% et poulets à rôtir 10%.

11. La consommation de farine de colza au Royaume-Uni en 1973 a été de 140.000 tonnes, dont 52% ont été fournis par les importations de farine. Les principaux fournisseurs de farine de colza au Royaume-Uni sont l'Algérie, le Pakistan, la France, l'Allemagne et l'Italie.
12. La farine de colza est achetée en tant que source de protéines et c'est pourquoi son prix reflète sa valeur comme telle, comparée à celle d'autres sources. En pratique, la farine de colza se vend avec rabais par rapport aux autres sources de protéines, notamment la farine de soja. Toutefois, si les prix sont comparés sur une base de prix pour 1% de protéines, ils sont très voisins. Une forte augmentation des cours de la farine de colza a eu lieu en 1973 et au début de 1974 à cause de la réduction des approvisionnements en farine de soja et de poisson. En août 1974, le prix de la farine de colza était de £74/tonne.
13. L'huile et la farine de colza font partie d'un marché très compétitif en raison du degré d'interchangeabilité des produits de graines oléagineuses. L'huile de colza se trouve en concurrence essentiellement avec les huiles de soja, d'arachide, de tournesol, de coton et de sésame. La farine de colza se trouve en concurrence avec des sources de protéines, telles que d'autres tourteaux d'origine végétale, les aminoacides et l'urée de synthèse.
14. Dans le Royaume-Uni, la plus grande partie de la transformation et du négoce des graines de colza et des produits du colza est entre les mains d'un petit nombre de firmes importantes. Dans le commerce de farine de colza, les courtiers et les revendeurs ont maintenu leur position dans une très large mesure.
15. Le marché de la CEE (des six membres initiaux) est important à cause de l'encouragement assuré à la production de colza dans le Programme Agricole Commun. En 1972, la production de graines de colza de la CEE était de plus de 1 million de tonnes, la France ayant produit plus de 720.000 tonnes. L'utilisation totale de graines de colza dans la CEE a été de 1,2 million de tonnes en 1972. Le principal importateur était l'Italie. Le commerce des produits de colza dans le CEE est caractérisé par le niveau du commerce intérieur à la Communauté. Les deux plus grands marchés pour l'huile de colza sont la France et l'Italie, et ceux pour la farine de colza sont la France et l'Allemagne, bien qu'en 1972 les Pays-Bas aient remplacé l'Allemagne en tant que deuxième marché par ordre d'importance pour la farine de colza dans la CEE.
16. Les importations de graines de colza et de farine de colza sont généralement exemptes de droits d'entrée sur les marchés étudiés dans le rapport. Les importations d'huile de colza se heurtent habituellement à des barrières douanières.
17. Le colza est essentiellement une récolte de pays tempérés; en 1972, les pays en voie de développement n'ont participé qu'avec 29% à la production mondiale. Parmi les pays producteurs tempérés, le Royaume-Uni est le seul pays où l'on s'attend à un développement rapide de la production. A cause de la présence d'acide érucique dans l'huile de colza et de glucosinolates dans la farine, l'avenir des graines de colza dépend du succès de l'élimination de ces éléments indésirables. En janvier 1975, une nouvelle impulsion a été donnée en ce sens par une déclaration d'un Comité de la CEE recommandant l'utilisation d'huiles de colza avec de faibles teneurs en acides gras à longue chaîne lorsque les huiles sont destinées à la consommation humaine. En fait, le développement de races de colza avec une teneur faible ou nulle en acide érucique est déjà en cours, le Canada venant en tête pour la culture de ces races. Le développement de races avec une faible teneur en glucosinolates n'est pas tout à fait aussi avancé, mais en 1980, si les recherches progressent comme prévu, il devrait y avoir sur le marché des races à faible teneur en acide érucique et en glucosinolates. L'autre menace pour l'avenir des graines

de colza est la concurrence d'autres produits de graines oléagineuses. Les principaux concurrents sont l'huile de palme, le soja et le tournesol. D'après certaines sources, le soja et le tournesol peuvent offrir de meilleures perspectives à de nouveaux producteurs, mais si, compte tenu de tous les autres facteurs, le colza reste la seule possibilité viable de graines oléagineuses, il semblerait qu'il n'y a pas de raison de restreindre le programme de développement de sa production si elle est compétitive. Toutefois, il faut surveiller de près les tendances du marché.

RESUMEN

El mercado de colza y sus productos en Europa occidental, con particular referencia al Reino Unido

1. La colza oleaginosa deriva de especies del género *Brassica* y para el propósito de este trabajo las especies a que se hace referencia son la *B. napus* y la *B. campestris*.
2. La colza es principalmente un cultivo de zonas templadas, constituyendo uno de los varios cultivos de semillas oleaginosas explotadas con el propósito de obtener aceite y harina. Su contenido en aceite es del orden del 42% y su contenido en torta alrededor del 57%. La torta tiene un contenido medio de proteínas del 39%. La producción mundial de colza se elevó a 7 millones de toneladas en 1973. Las principales zonas de producción son Canadá, India, la República Popular de China y Europa.
3. El comercio mundial de colza se ha expandido rápidamente desde principios de los años 60 y en 1973 las exportaciones superaron la cifra de 1,7 millones de toneladas. La exportación de Canadá dominan el comercio mundial y superan 1 millón de toneladas al año. Francia y la República Federal de Alemania (en adelante llamada Alemania) introducen en el mercado mundial más de 200.000 toneladas de colza, en años normales.
4. Hay también algún comercio de productos de colza, aunque la mayoría de éstos se producen para el consumo en los mayores mercados, los cuales poseen grandes industrias de prensado. En 1973, las exportaciones de aceite de colza, procedentes de los principales países productores, fueron de 247.000 toneladas, siendo Europa occidental el mayor consumidor. Las exportaciones mundiales de harina de colza fueron de 378.000 toneladas en 1973. Europa occidental es el principal suministrador e importador de harina de colza, originándose esta situación a causa del comercio interior de la Comunidad Económica Europea.
5. El mercado del Reino Unido fué de 121.000 toneladas en 1974. Hasta la mitad de los años 60, el Reino Unido dependía totalmente de los suministros importados, pero en la actualidad los agricultores del Reino Unido cultivan colza y la producción interna supone una creciente participación en el total de suministros. A causa del apoyo concedido a la producción de cosechas oleaginosas en la CEE, se espera que la producción de colza del Reino Unido continúe expandiéndose.
6. Los principales países suministradores externos de colza al Reino Unido son Canadá, Polonia, Dinamarca, Francia, Alemania y Holanda. En 1972, Canadá suministró 10.000 toneladas; Holanda 28.000; y Suecia, que no es una fuente consistente de suministros, 55.000 toneladas, constituyéndose en el mayor suministrador individual.
7. El precio de la colza se elevó de forma constante durante el período cubierto por este trabajo, pero tomó gran impulso después de 1970. En 1973, cuando los precios de todas las semillas oleaginosas sufrieron una alza, el precio de la

colza se elevó a un nivel sin precedentes de 84 libras tonelada en el primer trimestre de 1973. Esta tendencia continuó en 1974 y en el mes de abril la colza canadiense (40 por ciento de contenido en aceite) se cotizó a 185 libras por tonelada.

8. Los productos de la colza son el aceite y la harina. El aceite de colza se utiliza ampliamente como ingrediente de margarinas, grasas compuestas para cocinar y aceite para cocinar. Sin embargo, su utilización para estos fines es limitada a causa de su contenido en ácido erúcico. En 1974, se utilizaron para la fabricación de margarina y grasa compuesta para cocinar unas 412.000 toneladas de aceites vegetales y marinos, y grasa animal. El uso de aceites de colza en estos productos fué de 21.000 toneladas. Se estima que otras 25.000 toneladas de aceite de colza se utilizan en aceites líquidos comestibles y que el resto de los suministros se utilizan en aplicaciones técnicas. Cuando se utiliza como aceite industrial es esencial que el contenido en ácido erúcico del aceite sea por lo menos del 40%, nivel inaceptable en usos comestibles.
9. Hasta 1973, el aceite de colza se vendía normalmente a un precio inferior, en unas 6 libras/tonelada, que su más cercano competidor, el aceite de soja. En 1974, la relación de precios aceptada se distorsionó ampliamente, como resultado de una prohibición italiana sobre el uso de aceite de colza a causa de su contenido en ácido erúcico. En septiembre de 1974, el precio del aceite de colza en almacén fué de 390 libras/tonelada y el del aceite de soja 460 libras/tonelada.
10. La harina de colza, como el aceite, tiene factores cualitativos que limitan su uso en formulaciones para la alimentación animal. El límite para la harina de colza viene impuesto por la presencia de glucosinolatos, que activados pueden tener efectos tóxicos. El procesamiento puede eliminar la enzima activadora en alguna extensión, pero se han desarrollado programas de selección, obteniéndose variedades en las que los elementos tóxicos se han más o menos eliminado. En la actualidad los límites superiores de inclusión de harina de colza en la alimentación animal recomendados son: vacunos adultos 10%; cerdos en cebo 5%; gallinas ponedoras 3%; y pollo de carne 10%.
11. El consumo de harina de colza en el Reino Unido en 1973 fué de 140.000 toneladas, de las cuales el 52% estaba constituido por harinas importadas. Los principales suministradores de harina de colza al Reino Unido son Argelia, Pakistán, Francia, Alemania e Italia.
12. La harina de colza se compra como fuente de proteínas y su precio, por tanto, refleja este valor como tal, comparado con el de otras fuentes. En la práctica, la harina de colza se vende a un precio inferior al de otras fuentes de proteínas, especialmente la harina de soja. Sin embargo, si se comparan los precios sobre un precio base para un 1% de proteínas, se encuentra que los precios son muy similares. En 1973 y comienzos de 1974, tuvo lugar un rápido incremento del precio de la harina de colza a causa de la reducción de los suministros de harinas de pescado y soja. En agosto de 1974, el precio de la harina de colza fué de 74 libras/tonelada.
13. La harina y el aceite de colza forman parte de un mercado altamente competitivo a causa del grado de sustitución de los productos de semillas oleaginosas. El aceite de colza compite principalmente con el de soja, cacahuete, girasol, algodón y sésamo. La harina de colza compite con fuentes de proteína, tales como otras tortas oleaginosas vegetales, aminoácidos sintéticos y urea.
14. Dentro del Reino Unido la mayor parte del procesamiento y comercio de la colza y sus productos los realizan unas pocas firmas importantes. En el comercio de la harina de soja los corredores e intermediarios han mantenido su posición en el máximo grado.

15. El mercado de la CEE (de los seis miembros originales) es importante a causa del fomento decidido a la producción de colza bajo la Política Comunitaria Agrícola. En 1972, la producción de colza de la CEE superó 1 millón de toneladas, produciendo Francia más de 720.000. El consumo total de colza de la CEE, en 1972, fué de 1,2 millones de toneladas. El principal importador fué Italia. El comercio de productos de colza en la CEE se caracteriza por el grado de intercambios dentro de la propia Comunidad. Para el aceite de colza los dos principales mercados son Francia e Italia, y para la harina Francia y Alemania, aunque en 1972 Holanda sustituyó a Alemania como el segundo mercado más importante de la CEE para la harina.
16. Las importaciones de colza y harina de colza están generalmente libres de derechos en los mercados estudiados en este informe. Las importaciones de aceite de colza tienen que hacer frente normalmente a algunas tarifas aduaneras.
17. La colza es en principio un cultivo de zona templada; en 1972 los países en vías de desarrollo aportaron solamente el 29% de la producción mundial. Entre los países productores de la zona templada, el Reino Unido es el único país donde se espera que la producción se expanda rápidamente. A causa de la presencia de ácido erúcico en el aceite de colza y de glucosinolatos en la harina, el futuro de la colza depende del éxito en la eliminación de estos elementos. En enero de 1975 se ha concedido nueva importancia a este problema, a causa de una comunicación de un Comité de la CEE recomendando el uso de aceites de colza con bajos niveles de ácidos grasos de larga cadena, cuando los aceites se utilicen para el consumo humano. De hecho, el desarrollo de variedades de colza con nivel bajo o nulo de ácido erúcico se encuentra ya en vías de solución, siendo Canadá el país más adelantado en cuanto al cambio hacia el cultivo de estas variedades. El desarrollo de variedades con bajo contenido en glucosinolato no está todavía tan avanzado, pero se espera que en 1980, si la investigación progresiona de acuerdo con los planes establecidos, podrá disponerse de variedades comerciales de colza con bajos niveles de ácido erúcico y glucosinolato. Otro peligro para el futuro de la colza es la competencia de productos procedentes de otras semillas oleaginosas. Los principales competidores son la palma de aceite, la soja y el girasol. Algunos autores creen que la soja o el girasol pueden ofrecer mejores perspectivas a los nuevos productores; pero si, teniendo en cuenta todos los demás factores, la colza continua siendo la única posibilidad viable de cultivo de semillas oleaginosas en un país dado, no existe ninguna razón para restringir su desarrollo, si su producción es competitiva. No obstante, habrá que mantener una estrecha vigilancia sobre las tendencias del mercado.

Introduction and definition of rapeseed

This study analyses the United Kingdom market for rapeseed and its products. A brief survey of markets in the six original member countries of the European Economic Community (EEC) is also made.

Oilseeds are valued for their oils, which are used for both edible and industrial purposes, and for the oilcake or meal which remains after crushing and which is used as a source of protein in animal feeds. Any analysis of the market for a particular oilseed cannot be made in isolation from the factors which govern the market for competing oilseeds and their products. This is because the demand for fat can be met by vegetable oils, marine oils and animal fats whilst that for protein is largely met by vegetable oilcakes, fishmeal, animal by-products and synthetic amino acids. The degree of substitutability is further complicated by the fact that the products of oilseeds themselves are also to some extent interchangeable.

The oilseeds that compete most closely with rapeseed are soyabean, sunflower-seed and groundnuts. Their oils have a reasonably good degree of substitution, but the meals have less interchangeability. Because of the degree of substitution between oilseeds and their products and the seeds' differing yields of oil and meal, complex price relationships exist within the market, as efforts are made by producers and crushers to balance the supply of oil and meal in relation to demand. In the case of rapeseed, the oilseed to which its demand most closely relates is soyabean. Both oilseeds have sufficiently compatible properties to allow for ease of substitution of the oils, although the erucic acid content of rapeseed oil does limit its use in some formulations. The meals are not substitutable to the same degree because of factors which limit the addition of rapeseed meal to certain compound animal feeds.

Unlike other oilseeds traded on world markets, rapeseed does not derive from one species, but may come from several species belonging to the genus *Brassica*. Within this genus there are species which may be referred to as mustard seed. For the purposes of this report the following distinctions between rapeseed and mustard seed are made. Species which are regarded as rape are *Brassica napus* and *B. campestris*. Species which are regarded as mustards are listed below. *B. nigra* is commonly known as black mustard and was once extensively cultivated for its seed, which was used as a condiment. This species has now largely been replaced by *B. juncea* which is known as Indian or brown mustard. Because of its importance in Asia it is best known as an oilseed plant, but in Western Europe it has largely replaced *B. nigra* in condiment mustard. Because of its importance in India and Pakistan *B. juncea* is regarded as a commercial variety of rapeseed as Table (I) below illustrates. Other species known as mustards are *B. carinata*, cultivation of which is confined to Ethiopia and neighbouring countries and which has little importance in international trade, and *Sinapis alba*, or white mustard, which is important as a condiment.

Table I below lists definitions of the main commercial varieties of rapeseed.

Table I
Definition of rapeseed

| Botanical (Latin) name | Correct English | Synonyms |
|--|--------------------|---------------------------------|
| <i>Brassica napus</i> | | |
| ssp* <i>oleifera</i> | Winter rape | Oil rape, rapeseed, swede rape, |
| <i>forma biennis</i> | Summer rape | oilseed rape |
| <i>forma annua</i> | | |
| <i>Brassica campestris</i> | | |
| ssp* <i>oleifera</i> | Winter turnip rape | Rapeseed, oil turnip |
| <i>forma biennis</i> | Summer turnip rape | |
| <i>forma annua</i> | | |
| <i>forma annua</i> var. <i>chinensis</i> | Summer turnip rape | Chinese mustard |
| " " var. <i>pekinensis</i> | Summer turnip rape | Celery cabbage, Chinese kale |
| " " var. <i>dichotoma</i> | Summer turnip rape | Toria |
| " " var. <i>trilocularis</i> | Summer turnip rape | Sarson |
| <i>Brassica juncea</i> | Brown mustard | Leaf mustard, Indian mustard |

*ssp:—subspecies

Source: *Rapeseed*, L. A. Appelqvist and R. Ohlson Ed., 1972, Elsevier Publishing Co, Amsterdam.

Of the species of *Brassica* listed in the table, rapeseed from Europe is predominantly *B. napus* (Winter rape) and that from Canada *B. campestris* (Summer turnip rape). However, rapeseed from the Far East may be either summer turnip rape, brown mustard (*B. juncea*) or a mixture of these, as often the two species are grown together. Seed from India and Pakistan is sometimes referred to as 'toria' or 'sarson', but these names do not identify particular species but rather describe the several types of early sown *Brassica* (toria) and the late sown *Brassica* (sarson). In some regions sarson may be summer turnip rape and in others brown mustard.

Buyers in the UK make a distinction between rapeseed and mustard and dislike the presence of mustard in rapeseed meal imports as it is not wholly acceptable in animal feeds because of its pungent properties. Therefore in this report the same distinction is made and rapeseed only is the commodity dealt with.

The oil content of rapeseed varies according to the different production areas and also the different varieties grown. Generally speaking, however, rapeseed contains about 42% oil and 57% meal. The oil is used as an edible oil in the production of margarine, compound cooking fats and cooking oils. It also has technical uses and is often used for industrial purposes, when it is further processed into blown and sulphonated oils. For technical purposes, a high erucic acid content is desirable but supplies to this market may be adversely affected because of the greater importance of rapeseed oil for edible purposes. Erucic acid is undesirable in this outlet and as a result low erucic varieties of rapeseed have been developed.

Rapeseed meal is used as an ingredient in compound animal feed. Its use is limited because of its glucosinolate content. Although glucosinolates can be inactivated by processing methods, these are not infallible: therefore seed-breeding programmes have been established to develop not only low erucic rapeseed, but also glucosinolate-free rapeseed. Low erucic varieties of rapeseed are already available and Canada, the leading supplier of rapeseed to world markets, is likely to have glucosinolate-free strains in use by 1977.

World production and trade in rapeseed

A summary of world rapeseed production between 1964 and 1973 is given in Table A1 of the statistical appendix.* In the period 1964–1968 production averaged 5.0 million tonnes per year, and between 1969–1973 it averaged 6.6 million tonnes per year. Production peaked in 1971 at 7.9 million tonnes, whilst in 1972 and 1973 levels were 6.6 and 7.0 million tonnes respectively.

The world's major producers of rapeseed are Canada, India, the People's Republic of China, the EEC and Eastern Europe. From the point of view of world trade, however, India and China have little importance, domestic consumption accounting for practically all production. Indeed, as shown in Table A2, world rapeseed exports are less than one quarter of total world production, and the totals shown therein also contain some quantities of mustard seed.

Of the world's producer/exporter countries, Canada is the most important. Canadian production of rapeseed (Table A1) showed remarkable expansion between 1964 and 1970, when it increased from 0.3 million tonnes to 1.6 million tonnes. A record output of 2.2 million tonnes was achieved in 1971, but later figures indicate a sharp downturn. In 1972 output was 1.3 million tonnes and in 1973 it was 1.2 million tonnes. The initial impetus to Canadian production was largely due to a move out of wheat by farmers in the mid-1960s when wheat was in surplus and had therefore declined in profitability. The recent decline in rapeseed production represents a response to changing market conditions whereby competing grains offered better returns to farmers. Growers were also concerned over higher than normal losses of rapeseed from pests and diseases. Expectations for the next few years are for a recovery in acreage and thus a return of production to the level achieved in 1971¹.

Following Canada in importance as a producer/exporter are the countries of Western Europe, with France and Sweden dominating. Table A1 shows West European production rising over the period 1964 to 1973 to reach just over 1.4 million tonnes in 1972 and 1973. French and West German production expanded until 1972 largely because of the stimulus given by the EEC's Common Agricultural Policy (CAP) – discussed below. French production reached 722 000 tonnes and West German output 249 000 tonnes. In 1973 both countries fell short of the production levels attained in 1972. Sweden is a traditional grower of rapeseed, and her production rose from 181 000 tonnes in 1964 to 339 000 tonnes in 1973.

It should also be noted that countries of little importance in global terms as rape-seed producers, such as the Netherlands and the UK are growing increasing quantities of rapeseed. The Netherlands produced over 40 000 tonnes in 1972 and 1973, more than four times the 1964 level. Until 1967 the UK was an insignificant producer of rapeseed, which was regarded as a cereal break-crop rather than having commercial significance in its own right. In 1973, 31 000 tonnes were produced with greater quantities forecast for the future owing to incentives offered by the EEC agricultural policy.

*All tables in the statistical appendix will be prefixed with the letter A throughout this report.

Other producing countries worth noting are in Eastern Europe, especially the German Democratic Republic (East Germany) and Poland. In Latin America, Chile is a major producer of rapeseed, although this has had little impact on the amount of rapeseed entering world trade.

Trade in rapeseed has expanded steadily. World exports of rapeseed from the main primary producing countries reached 1.7 million tonnes, in 1973.² An indication of the rate of expansion experienced is shown by the fact that world exports of rapeseed and mustard seed totalled only 350 000 tonnes in 1963 (Table A2). Many countries put rapeseed and mustard seed together in one category in their trade statistics, as they are both *Brassica* species. However, mustard seed accounts for only a small proportion of these figures and whenever possible any reference to mustard will be avoided as members of the trade dealing with oilseeds treat these crops as separate items.

The major countries contributing to this rise in world exports have been Canada, France and Sweden. Canadian exports now run at a level of over one million tonnes. In 1963 they were 162 000 tonnes. In recent years France and Sweden have accounted for 300 000–400 000 tonnes of the seed entering world trade. In 1973 Swedish exports were 161 000 tonnes and French supplies were 154 000 tonnes.

A summary of world imports of rapeseed (Table A3) shows that Western Europe and Japan are the major markets. In 1973 imports into Western Europe totalled 778 000 tonnes. This market is dominated by members of the EEC. However, the most rapid growth in demand for rapeseed between 1963 and 1973 occurred in Asia. Japanese requirements accounted for the bulk of this demand.

Apart from trade in the oilseed itself, there is also considerable trade in the oil and meal.* This of course involves not only oil and meal from seed producing countries, but oil and meal crushed by importers of rapeseed, the most notable of which is Japan. World exports of rape, colza, (the French term for oil from *B. napus*) and mustard oils from 1963 to 1973 are shown in Table A4. In 1973 world exports were 381 000 tonnes. Other sources indicate that exports of rapeseed oil alone, from primary producing countries were 247 000 tonnes.²

Table A5 gives a summary of major world imports of rapeseed oil. Western Europe is by far the largest market, with trade between members of the EEC running at a high level. The market in Africa expanded notably in the period, most demand being generated by Algeria and Morocco.

Rapeseed meal is also traded on a large scale. Table A6 shows world exports and imports from 1963–1973. The table shows a fairly steady increase in trade until 1973 when volume decreased, although with exports at 378 000 tonnes this was more than double the 1963 level. Again, Western Europe is the dominant supplier, providing 65 per cent of world requirements in 1973. Western Europe is also the major market for rapeseed meal, indicating the high level of trade between European countries in this product.

*The term meal will be used throughout this report, although some production and trade may be in rapeseed cake.

The UK market for rapeseed

In quantitative terms, demand for rapeseed meal, which is met by imports and production from UK crushings of rapeseed, takes up the largest part of the market. The major proportion of supplies is imported, but domestic production is steadily increasing. Most of the rapeseed oil consumed in the UK is from crushings of imported and local seed. Imported supplies of rapeseed oil are of minor significance. The quantities of rapeseed and rapeseed products available in the UK necessarily fluctuate because of the substitution factors which prevail in the oil-seeds market.

PRODUCTION AND IMPORTS

Imports of rapeseed between 1961 and 1972 are shown in Table A7. These, together with the UK's own domestic production of rapeseed, indicate the size of the market, since exports and re-exports of rapeseed are insignificant.

The total import figures in Table A7 show a relatively small, but growing market between 1961 and 1964. From 1965, when imports reached 33 000 tonnes, imports fluctuated, but the overall trend was upward. Although 1973 imports (Table A3) were somewhat lower, 95 000 tonnes, than the record achieved in 1972, a market size of 126 000 tonnes, continued the expansionary trend. The 1974 figures showed a continuation in the growth of domestic production, but a decline in imports, so that the 1974 market fell short of the 1973 level by 5,000 tonnes. The overall growth in the UK market between 1968 and 1974 is illustrated by Table II.

Table II
Total UK market for rapeseed 1968–1973

| Year | Production (a) | Imports (b) | Total |
|---------|----------------|-------------|-------|
| 1968 | 13 | 81 | 94 |
| 1969 | 12 | 78 | 90 |
| 1970 | 8 | 50 | 58 |
| 1971 | 10 | 65 | 75 |
| 1972 | 14 | 103 | 117 |
| 1973 | 31 | 95(c) | 126 |
| 1974(d) | 55 | 66 | 121 |

Notes: (a) As given in Table A1

(b) As given in Table A7

(c) As given in Table A3

(d) *Tropical Products Quarterly*, XVI (1), 1975, Commonwealth Secretariat.

In 1974 UK production accounted for 45% of the total demand for rapeseed production, but both short and long-term projections indicate an increase in rapeseed production, although these vary quite widely. The Ministry of Agri-

culture estimate that by 1980 the UK acreage could increase by two or two and a half times the 1974 level of 61 000 acres. Given an average yield of 18 cwt/acre (the level attained in 1974) production could rise to between 110 000 and 127 000 tonnes. Other estimates are more optimistic, although based on a shorter time scale. One source of information predicted that the area given over to rapeseed would be 200 000 acres by 1976, yielding 183 000 tonnes of rapeseed.³ A projection to 1978 sees production increasing to between 200 000 and 300 000 tonnes of seed.⁴ The major difference between the Ministry of Agriculture's estimate and the projections is that the latter see the rate of expansion experienced in acreage in recent years continuing, whilst the former see some stabilisation of the trend. However, all the projections show a definitive increase in production which substantially exceeds the present UK market size. Therefore, imported rapeseed and rapeseed products could be displaced in the longer term by the domestic crop.

SOURCES OF SUPPLY

Despite its increasing domestic output of rapeseed, the UK relies on imports for over half of its supplies. Before the mid-1960's this reliance was 100%. Table A7 shows that the most consistent suppliers to the UK market in the period covered were Canada and the Netherlands. Canadian supplies increased from 2 900 tonnes to 9 900 tonnes and imports from the Netherlands climbed from 1 200 tonnes to 28 000 tonnes in 1972. The traditional producers of rapeseed, Sweden and Eastern Europe also exported to the UK. Swedish supplies were sporadic, but in 1972, they were almost 56 000 tonnes making Sweden the largest single supplier and accounted for over half UK imports. Polish and East German supplies were of particular significance in 1967 and 1968 when they were in fact the main sources of rapeseed, but after 1969 other European sources came to the forefront.

The increase in imports in 1972, 59% over 1971 levels, was due to larger supplies being available on world markets. Of most significance to the UK were the larger shipments from the Netherlands and Sweden, from where the bulk of increased imports came. In 1973, imports totalled 95 000 tonnes and in 1974, 66 000 tonnes.

As a result of the increase in imports of rapeseed this oilseed together with soya, dominates the UK crushing industry. In 1972, soya and rapeseed accounted for nearly 80% of the total of oilseeds crushed in the UK.⁵ The significance of this in meal and oil terms is discussed in the following sections dealing with those two products.

PRICE

The annual average import price of Canadian rapeseed, cif, European ports is listed in Table A8 for the period of 1965–1973. As rapeseed and soyabean prices tend to move together, import prices of soyabean are also listed in the Table. The graphs in Figure 1 illustrate the prices in Table A8.

Up until 1969 rapeseed prices remained fairly stable at an annual average of £45/tonne. From 1969, however, price rises gathered momentum because of changing market conditions. In 1970 oilseeds and vegetable protein sources became increasingly scarce with the result that price rises became inevitable. Despite the fact that in 1971 and 1972 there were higher export availabilities of rapeseed, prices continued to rise because of a shortfall of three major competing oilseeds, soya, groundnuts and sunflower. Thus by 1972 the price of rapeseed averaged £59/tonne. The year 1973 was one of uncertainty in oilseed markets and this was reflected by the unprecedented rises in the prices of all oilseeds. Rapeseed almost doubled in price and averaged £103/tonne over the year. The two major contributory factors were, firstly, an increased demand

Figure 1

A comparison of oilseed import prices



for protein which was further intensified by the shortage of fish meal (caused by overfishing in Peruvian waters) and, secondly, the US embargo in June on exports of soyabean and their products. Then in November 1973 the price was further affected by the fuel crisis, and trade sources quoted a price of around £133/tonne. In 1974 there was a continued upward trend in rapeseed prices, despite early forecasts that a record American soyabean crop and Russian sunflower crop would provide an oilseed surplus.

Price quotations have not appeared on a regular basis in 1974, but are available up until April 1974, after which time prices, if quoted at all, were nominal. In February the average price per tonne for 40% Canadian rapeseed, cif, nearest forward shipment was £185. In April this dropped to £151/tonne.

The UK market for rapeseed oil

SOURCES OF SUPPLY

Because of the degree of interchangeability between vegetable oils it is unrealistic to study the demand for rapeseed oil in total isolation from the demand for other oils. Those oils with which rapeseed oil most closely competes are groundnut, soya, sunflower, cottonseed and other vegetable oils which can be grouped as liquid edible oils. Rapeseed oil also competes with marine oil. To place rapeseed in some sort of perspective therefore, Table III below shows supplies of all liquid edible vegetable oils and marine oils since 1964.

Table III

Estimated UK supplies of vegetable and marine oils 1964–1972

| Year | Vegetable Oils (liquid edible) | Marine oils | '000 tonnes |
|------|-----------------------------------|-------------|-------------|
| 1964 | 204 | 116 | 320 |
| 1965 | 229 | 179 | 408 |
| 1966 | 246 | 194 | 440 |
| 1967 | 267 | 298 | 565 |
| 1968 | 333 | 226 | 559 |
| 1969 | 327 | 230 | 557 |
| 1970 | 320 | 206 | 526 |
| 1971 | 252(i) | 235 | 487 |
| 1972 | 266(i) | 225 | 491 |

Note: (i) UK production of refined and deodorised vegetable oils.

Sources: *Vegetable oils and oilseeds, a review*, Commonwealth Secretariat, London, 1973.

Annual Proceedings of the International Association of Seed Crushers, Killarney Congress, 1973.

Between 1968 and 1971 rapeseed oil supplies accounted for an average 14% of total liquid edible vegetable oils available and for only 8% of supplies if marine oils were taken into account. The year 1972 showed a sharp upswing, such that rapeseed oil accounted for 20% of vegetable oil supplies and 11% of total supplies. Although rapeseed oil is one of the minor oils when related to total supplies, it is of considerable importance to the UK crushing industry as shown by Table IV.

The figures in Table IV show that, with the exception of 1970 when rapeseed crushings were exceptionally low, partly because of the supply situation and partly because one UK mill was not in a position to crush any rapeseed that year, crude rapeseed oil production accounted for an average 80% of rapeseed oil supplies available between 1968 and 1973.

Table IV**UK total crush of oilseeds and rapeseed and rapeseed oil supplies 1968–1973**

| Year | Total oilseeds crushed | Rapeseed crushed | Crude rapeseed oil production | Available supplies of rapeseed oil Mill production plus net trade (in oil) | '000 tonnes |
|------|---------------------------|---------------------|----------------------------------|--|-------------|
| 1968 | 604.5 | 88.4 | 38.6 | 49.8 | |
| 1969 | 595.4 | 84.9 | 35.7 | 47.8 | |
| 1970 | 547.6 | 48.5 | 18.5 | 32.5 | |
| 1971 | 545.6 | 72.4 | 29.5 | 34.5 | |
| 1972 | 771.1 | 114.4 | 45.1 | 54.9 | |
| 1973 | 1 056.6 | 117.9 | 42.8 | 55.9(a) | |

(a) Provisional figures.

Source: *Tropical Products Quarterly*, 15 (1), Commonwealth Secretariat, London 1974.

Imports of rapeseed oil are shown in Table A9 for the period 1963 to 1972. Import levels have fluctuated from as little as 20 tonnes in 1967 to almost 15 000 tonnes in 1970. The main suppliers of oil to the UK are Canada (since 1970), Poland and the Netherlands. Generally speaking oilseed crushing has been declining in the UK over the past twenty-five years. In 1961 oilseed crushings by UK mills were 950 000 tonnes, and it was not until the opening of a soya bean crushing mill by Unilever in 1972 that output recovered. However, rapeseed did not share in this decline.

For an oilseed to maintain its share of crushings in an industry, the processor must be assured of a good return on his operations. Because the industry is serving two markets, the requirements of each are highly unlikely to balance at any one time. The seed crusher therefore must alter his throughput of oilseeds to try to achieve this. Sometimes there is a build up of oilmeals because of factors operating in the protein market. This can in turn cause a decline in prices until the point is reached where crushers are no longer making a profit from their meal output although the return on oils may be adequate. As a result of this the rate of crushings is slowed down until the meal supplies are more in keeping with demand, but this also causes a relative decrease in oil output with the result that oil prices are pushed up. In the case of rapeseed crushing in the UK it would appear from the figures that this oilseed has generally offered crushers good returns and therefore has maintained its share of total crushings.

The UK has also a substantial refining industry. Production of refined and deodorised rapeseed oil is shown in Table V for 1968–1972.

Table V**UK production of refined rapeseed oil 1968–1972**

| | 1968 | 1969 | 1970 | 1971 | 1972 | '000 tonnes |
|--|------|------|------|------|------|-------------|
| | 40.8 | 43.8 | 28.8 | 29.0 | 45.7 | |

Source: IASC Congress Proceedings 1971 and 1973

All crude oil is refined before its eventual end use. Imported oil is generally at least partially refined in the country of origin.

USES OF RAPESEED OIL

Rapeseed oil is imported both as an edible vegetable oil and as a technical oil. Its edible qualities have recently been the subject of criticism because of the

content of erucic acid in the oil. Some experiments have shown that even moderate amounts of the oil in the diets of experimental animals can produce serious pathological changes especially on the heart and skeletal muscles.⁶ It has been suggested that before human muscle could be affected, rapeseed oil would have to account for 5.6% of the total calorie intake – in the UK the percentage is 1.2%.⁷ However the implications of these experiments together with the fact that some opinion holds that the presence of any erucic acid is undesirable, have led to increasing cultivation of low erucic acid varieties of rapeseed.

Despite this events in 1974 led to further controversy over the future of rapeseed oil. In January 1974, the Italian health administration banned the sales of oils containing more than 15 per cent erucic acid and gave companies until September 1974 to sell off their stocks. However, in April 1974 the chairman of an Italian company producing vegetable oil was arrested and charged under the labelling laws for not listing accurately ingredients on his oil packs. The rapeseed oil sold was said to contain 46% erucic acid. In effect, therefore, this arrest pre-empted the September deadline. The stated reason for the ban was that Italian research had shown a link between erucic acid and heart disease, lesions of the digestive tract, and liver, kidney and reproductive system ailments. The repercussions of this were felt in other markets which use large quantities of rapeseed oil. In France, a pressure group of eleven consumer organisations was formed to persuade vegetable oil manufacturers to stop using rapeseed oil in their blends.⁸ This followed on directly from the Italian action, but opinion in France has been steadily mounting against rapeseed oil, since conflicting research results were published. In 1967 research in France established that rats fed on rapeseed oil developed heart diseases. The results of these experiments were not published until 1970, by which time the French acreage of rapeseed had expanded under government encouragement. When they were published, a committee was set up to investigate the results and declared that there was in fact no evidence to suggest rapeseed oil was harmful. In February 1974 the matter was brought to the forefront again when one of the research institutes represented on the 1971 Committee dissociated itself from the clearances given to the product.⁹ With the continued debate on the safety of rapeseed oil, the EEC Commission instituted a Scientific Committee for food in April 1974 to investigate the properties of rapeseed oil. The Committee delivered its opinion in January 1975. It studied not only the conventional rapeseed oils, but also the oils from *Brassica* hybrids which have an erucic acid content of 5% or less. Their conclusions and recommendations dealt with the effects of rapeseed oils on animals and on humans. They concluded that rapeseed oils rich in long chain fatty acids, were liable to cause lesions on a number of species of animals. Erucic acid was mainly incriminated, but its sole responsibility was still under discussion. On the other hand the low erucic acid rapeseed oil neither slowed down the growth of young animals nor caused such severe lesions as the oils rich in erucic acid. The effects of rape-seed oil on man were also studied. It was found that the few investigations and studies conducted on man had not provided evidence of adverse effects to date, but the Committee recommended that such studies should be continued. In view of the Committee's findings two overall recommendations were made. Firstly, as a matter of prudence, it was recommended that when rapeseed oils were used for human consumption, preference should be given to oils with low levels of long chain fatty acids, ie. the low erucic acid types. Secondly, it was felt that further research on long-chain fatty acids and more generally on all oils and fats used in food was necessary, for the effects reported for rapeseed oils were not necessarily unique to these oils. The conclusions of the Committee would therefore seem to have allayed the fears of some producers that the use of rapeseed oil might be restricted completely and will also encourage continued expansion of the cultivation of low or zero acid varieties of rapeseed.

EDIBLE USES

As an edible oil rapeseed has three main uses in the UK: as an ingredient in margarine and compound cooking fat and as a cooking oil.

The level of demand for oils and fats for human consumption has stabilised in recent years, although the pattern of consumption has changed with a trend away from solid fats into liquid oils. There has also been a trend away from animal fats to vegetable fats. This is particularly significant in the trend away from butter to margarine. This is due to the fact that the consumption of margarine is closely related to the price of butter. In recent years, butter prices have increased and this is likely to continue as UK prices come into line with EEC levels. In 1973 and 1974 this trend was halted as the price of butter was stabilized owing to subsidies, making margarine the more expensive product. Other factors which may have reinforced the trend away from butter are the use of polyunsaturated fats in some margarines, which not only add to the convenience of margarine by giving it a softer texture than butter, but are also said to be less likely to contribute to high cholesterol levels in the blood which may contribute to heart disease. Sunflower oil in particular seems likely to benefit from a continuation of this trend. Table VI below shows UK per capita consumption of compound cooking fats and other edible oils and fats.

Table VI

Estimated supplies per head per annum of oils and fats products moving into consumption in the UK 1967–1974

| Product | kg/capita | | | | | | | |
|---------------------------------|-----------|------|------|------|------|------|------|-----------------------|
| | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 (provisional) |
| Butter | 9.3 | 9.0 | 8.9 | 8.9 | 8.2 | 7.2 | 7.6 | 8.7 |
| Margarine ¹ | 5.0 | 4.9 | 5.2 | 5.0 | 5.4 | 5.9 | 5.4 | 5.0 |
| Compound cooking fats and lard | 5.6 | 5.4 | 5.4 | 5.5 | 5.1 | 5.6 | 5.4 | 5.6 |
| Other edible oils and fats | 5.2 | 6.2 | 6.1 | 6.3 | 6.1 | 5.6 | 6.4 | ... |
| Total converted to fat content: | 22.7 | 23.1 | 23.2 | 23.2 | 22.5 | 22.2 | 22.7 | ... |

Note: (1) Net supplies, ie not including ingredients shown on separate items elsewhere in the Table, eg butter and lard.
... not available.

Source: 1967–1972 *Trade and Industry*, August 30th, 1973, p 460–461, HMSO, London
1973 *Trade and Industry*, September 5th, 1974, p 515, HMSO, London.
1974 *Tropical Products Quarterly*, XVI (1) 54, Commonwealth Secretariat, London.

Rapeseed oil, provided that it can take full advantage of the interchangeability of vegetable oils, is likely to benefit from the trends in the fats and oils market because its prime use as an edible oil is in cooking oils and margarine. Official statistics are available for the consumption of rapeseed oil in margarine and compound cooking fat and these are listed below in Table VII.

Table VII

UK consumption of refined rapeseed oil in margarine and compound cooking fat, 1967–1974

| | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 (provisional) |
|---|------|------|------|------|------|------|------|-----------------------|
| Utilisation of all oils and fats used in the manufacture of margarine | 260 | 261 | 279 | 277 | 297 | 317 | 295 | 261 |
| Of which rapeseed oil: | 6 | 12 | 13 | 2 | 4 | 10 | 11 | 16 |
| Utilisation of all oils and fats used in the manufacture of compound cooking fats | 140 | 140 | 142 | 137 | 146 | 150 | 197 | 151 |
| Of which rapeseed oil: | 4 | 6 | 6 | 5 | 4 | 7 | 7 | 5 |

Source: 1967–73 Ministry of Agriculture, Fisheries and Food
1974 *Tropical Products Quarterly*, XVI, (1), Commonwealth Secretariat, London

As Table VII shows, the quantities of rapeseed oil used in margarine and compound cooking fat fluctuated from year to year, and in fact its share of total oils and fats consumption in the products also fluctuated. Not only does the proportion of rapeseed oil expressed as a percentage of total vegetable oils used in these ingredients vary, but it is also variable when expressed as a total of rape-seed oil available. The major reason for this is the interchangeability of vegetable oils. Manufacturers are not compelled to use rapeseed oil in a stated proportion in their formulations, as for example is the case in Sweden and West Germany. Rapeseed oil does not have special qualitative advantages over its competitors in these uses; therefore it is used only when it has a comparative price advantage over alternative ingredients. Within the vegetable oils group the main competitor is soya, whilst overall, marine oils in particular are regarded as a major competing ingredient.

Oil not accounted for in margarine or cooking fat formulations is used as a liquid edible oil or in technical applications. No figures are available regarding quantities but some indication can be given.

It is estimated that cooking oils and salad dressing contain about 7% of rapeseed oil.⁹ The main outlet for liquid oils is the catering trade, although there is also household use. Rapeseed oil is usually blended with soya bean oil. From UK population figures and the consumption data in Table (VI), and given the assumption that these oils contain on average 7% of rapeseed oil, annual consumption corresponds closely to reliable trade estimates of 25 000 tonnes per annum. It is thought that if limitations in the use of rapeseed oil for edible purposes are overcome, then its proportionate use in edible oils and fats will increase.

TECHNICAL USES

Once all the edible purposes to which rapeseed oil is applied have been covered, the remaining tonnage is used for technical application. In the UK a reliable estimate which has been given ranged from 4 000 to 6 000 tonnes per annum. As with the edible oil, quantities used vary according to price changes. Vegetable oils used as technical oils have declined in quantity because of the development of synthetic substitutes, which have a comparative price advantage over the natural products. Whether this trend continues will depend almost entirely on whether substitutes can maintain their advantage. It will also depend, in the case of rapeseed, on the erucic acid level of oil available. As low content seed varieties are developed, the erucic acid content of oil is falling. In its use as an edible oil this is highly desirable, but for technical purposes it is a distinct disadvantage. For most technical purposes it is essential that oil of an erucic content of at least 40% is used. For the manufacture of fatty acids, the desirable acid content is even higher, at around 50%. With commercial varieties of seed now available which yield oil with an erucic acid level as low at 5% to 10%, the use of rapeseed oil as a technical oil will be lost altogether unless the interests of technical processors are safeguarded by ensuring the continuation of production of some high erucic acid content seeds to satisfy the demand.

The most important application of technical rapeseed oil is its conversion to fatty acids which are used for the production of erucic acid and derivatives and also erucamide and derivatives which are used as plasticisers. Other uses of rapeseed oil in order of importance are as factice (rubber extender); as a lubricant for metal surfaces such as bearings; as an ingredient in cold rolling, cutting oils etc; as a soap for lubricant greases; as a metal quenching oil to remove heat from the metal; as a blown oil to be used in special inks, metallic pigments and lubricants; as a core oil for castings and, lastly, as oil for illuminants.

PRICE

Imports of rapeseed oil into the UK are relatively small when compared with the oil crushed from rapeseed by UK processors. As a result a regular series of prices

for imported oil is not readily available. Spot prices for home trade oil are available and these are listed in Table A10, for the period 1969–1973. Prices for various grades of oil available are shown, from crude oil to the specially processed 'blown' oil which is used for technical purposes. Prices of all grades of oil increased in the period although in 1972 some downturn was noted.

Because of the degree of substitutability between rapeseed and soyabean oil their prices are closely related and up until 1974 UK buyers quoted a discount of around £6/tonne as being necessary for rapeseed oil to be bought instead of soya. Table VIII below shows the historical discount applying between soyabean and rapeseed oils.

Table VIII

Price discount between rapeseed oil and soyabean oil

| | Average 1966–68 | 1970 | January/December 1971 | 1972 | Oct/Sept 1972/73 | £/tonne Nov 1973 |
|---------------------------------|--------------------|------|--------------------------|-------|---------------------|------------------------|
| Price of Dutch rapeseed oil | 85.0 | ... | 121.30 | 92.72 | 139.27 | 199.24 |
| Discount to soyabean oil, Dutch | –5.83 | ... | –3.70 | –3.60 | –7.35 | –6.73 |

Note: ... not available

Source: *Oil World Semi-Annual*, December 1973, ISTA, Mielke & Co, Germany

The year 1973 was one of wide variations and unprecedented rises in the price of all vegetable oilseeds and oils. This is reflected in the price quotations received from crushers and refiners during the course of this survey. Prices quoted for crude rapeseed oil were around £200/ton whilst those for refined oil varied between £300 and £400 per ton. Sources reported a virtual doubling of price since 1972, with no sign of a marked decline from 1973 levels in 1974.

In 1974, the normal price relationship between rapeseed and soya bean oils became distorted because of the controversy over the effect of the presence of erucic acid in rapeseed oil. In 1974, the market was particularly affected by the decision taken by the Italian Government to ban completely the sale of oil products containing rapeseed oil, followed by the action taken in France by pressure groups and by uncertainty over the outcome of the Committee of the EEC Commission which considered future regulations on the use of rapeseed oil.

Although cultivation and even use of zero erucic acid varieties of rapeseed had begun, trade sources in the UK reported in October 1974 that the accepted differential between rapeseed oil and soyabean oil had widened to £60 as opposed to £6. By January 1975, the differential was considerably smaller; spot prices for rapeseed oil were £418/tonne and for soyabean oil £408/tonne. The recommendations of the EEC Committee should enable the market to return to a more stable footing and the narrower differentials occurring in January 1975 reflected this. It was reported in February 1975 that the upper limits of erucic acid for inclusion in vegetable oils, expressed as a percentage of total long chain fatty acids had been established at 15% and it would appear that the Italian ban had been lifted.¹⁰

SOURCES OF COMPETITION TO RAPESEED OIL

As a source of oil, rapeseed competes with a range of other oilseeds which include soyabean, groundnuts, sesame, sunflowerseed and cottonseed. It may also compete to some extent with oil palm and coconut which are the major sources of lauric oils and which have rather more specialised fields of application. The group within which rapeseed is included is often referred to as the 'soft' oil segment of the market and within this group a further division between the oils can be made.

As noted in the section on uses of rapeseed oil, this oil and soyabean oil are widely used in blended products. The main reason for this is because once refined, the oils are more prone to oxidation and the development of off-flavours than some other oils and therefore require further processing to give them a longer shelf-life. Once refined, groundnut, sunflower and cottonseed oil do not require this further processing and are therefore regarded as high quality oils. As a result of this qualitative difference in the oils a price spectrum has formed wherein rapeseed and soyabean oil fetch lower prices.

However given the interchangeability of the oils it is still impossible to gauge the exact point of substitution through prices alone. Apart from the accepted discount at which rapeseed oil sells relative to soyabean oil, there may be a core of price inelastic demand for a number of oils where the limits of substitution are reached and blenders will use their preferred oil whatever the price. In the case of rapeseed, which is used as a secondary ingredient in most blends, the rate to which it could substitute is also limited by the oil's chemical characteristics, ie its erucic acid content which causes some food manufacturers to be cautious, or, as happened recently, ban the use of it altogether.

The UK market for rapeseed meal

SOURCES OF SUPPLY

Rapeseed meal marketed in the UK is obtained from either domestically crushed seed or is imported. A full breakdown of imports is shown in Table A11. Between 1961 and 1965 imports averaged 42 000 tonnes per annum.

From 1966 until 1973 imports averaged 85 000 tonnes per annum, (the 1973 figure is taken from Table IX). The largest single supplier of rapeseed meal on a regular basis to the UK was Algeria. Annual quantities from that country ranged from 13 000 to 29 000 tonnes. Also of importance to the UK market are Pakistan and the EEC. Supplies from Pakistan increased in the period under review and in 1972 were 20 000 tonnes. France, West Germany and Italy are the major EEC suppliers of rapeseed meal to the UK. With the exception of 1970 when their combined exports to the UK were only 18 500 tonnes, their exports to the UK after 1968 varied between 38 000 and 45 000 tonnes.

Total UK supplies of meal between 1966 and 1973 are shown in Table IX below.

Table IX

UK supplies of rapeseed meal 1966–1973

| Year | Meal Production (a) | Meal Imports (b) | Total |
|------|---------------------|------------------|-------|
| 1966 | 20 | 87 | 107 |
| 1967 | 22 | 77 | 99 |
| 1968 | 44 | 86 | 130 |
| 1969 | 43 | 100 | 143 |
| 1970 | 27 | 63 | 90 |
| 1971 | 41 | 96 | 137 |
| 1972 | 65 | 96 | 161 |
| 1973 | 67 | 73 | 140 |

Note: (a) 1971, 1972 and 1973: meal production calculated as 57% of the rapeseed crushings shown in Table IV.
(b) 1966–1972: import figures from Table A11. 1973: imports from Table A6.

Source: 1966–1970 "The Major Importing Markets for Oilcake" International Trade Centre, UNCTAD/GATT, Geneva 1972.

As Table IX shows, reliance on imports of meal, which were substantial, declined in the period. In 1966 imports accounted for 81% of total supplies and by 1973 this figure had fallen to 52%

At the same time, domestic production of rapeseed meal became relatively more important over the period, although yearly totals varied. In 1973, the domestic production of rapeseed meal reached 67 000 tonnes. A proportion of this total is obtained from domestically grown rapeseed. In 1968, when rapeseed was first grown in significant quantities, the meal equivalent obtained from the crop was 7.4 thousand tonnes; the figure for 1973 was 17.7 thousand tonnes. These tonnages represented 16.8% and 26.4% respectively of UK meal production in 1968 and 1973.

In a similar way to rapeseed and rapeseed oil, the meal is also vulnerable to substitution by other products if its price becomes uncompetitive. Total oilcake consumption in the UK is not expanding as farmers use alternative feedstuffs such as cereals. However, rapeseed meal maintained its share of the oilcake market despite this. Table X shows rapeseed meal supplies expressed as a percentage of total oilcake consumption for the period 1966–1972.

Table X
UK rapeseed meal supplies and oilcake disposals 1966–1973

| Year | Rapeseed meal supplies | Total oilcake disposals | Rapeseed as % of total |
|------|------------------------|-------------------------|------------------------|
| 1966 | 107 | 1 554 | 7 |
| 1967 | 99 | 1 376 | 7 |
| 1968 | 130 | 1 330 | 10 |
| 1969 | 143 | 1 332 | 11 |
| 1970 | 90 | 1 407 | 6 |
| 1971 | 137 | 1 245 | 11 |
| 1972 | 161 | 1 369 | 12 |
| 1973 | 140 | 1 543 | 9 |

Source: 1966–1973 Rapeseed supplies — Table IX.
1966–1973 Oilcake disposals — *Annual Abstract of Statistics*, 1974, Central Statistical Office, HMSO, London.

USES

The leading factor contributing to fluctuations in the use of a particular type of meal in compound feeds lies in the method by which compounders mix feed ingredients. Given an animal's nutritional requirements, which are basically for energy and protein with perhaps supplements such as vitamins and mineral traces, the compounder has to devise a means of feeding the animal most effectively while minimising costs. In the early 1960's it was found that the most effective way of doing this was by applying linear programming techniques to arrive at least-cost ration formulations. Given the alternative ingredients, their nutritional properties and their costs it was possible to find the relationship which produced the most liveweight gain at the least cost. Feeds compounded in this way are known as least cost rations and, as a result of the accessibility of computers, which can handle the quantities of constantly changing data required, this has become the accepted method of formulating feedstuffs.

As mentioned above, the ration must provide all the animal's nutritional requirements. It must provide in the form of carbohydrates enough energy to enable the animal to walk about, graze etc, and enough protein to build up and maintain body tissues. This part of the ration is sometimes referred to as the 'maintenance ration,' as it keeps the animal alive. However, livestock are sources of food and in order to maximise their liveweight gains or, in the case of dairy cows, their milk yield, the ration has to include extra energy and protein. Extra protein will produce new flesh in growth or be used as a source of milk proteins, whilst surplus energy will be stored as fat or flesh which may eventually become available for human consumption. This part of the ration is often referred to as the 'production ration.'

The buyer of animal feed ingredients is therefore looking for sources of protein and energy. Rapeseed meal is primarily bought as a source of protein and its price normally reflects the value of the alimentary units of protein it contains in relation to the units provided by other protein sources. At times when prime energy sources such as cereals are expensive, then protein sources may be used as they also contribute to energy. The price-relationship between protein sources is the most important factor underlying the market for protein and in practice rapeseed generally sells at a discount to other meals, notably soya. However, this

discount in fact takes into account the protein content differences of other meals and as Table XI below shows, prices per 1% of meal are very close. It is only when shortages occur that the differentials become sharper, as in the case of fishmeal in 1973.

Table XI

Prices of oilcakes and fish meal per 1% of protein 1971–1974

| | 1971 | 1972 | 1973 | Jan. | 1974 | £ sterling |
|-------------------------|------|------|------|------|------|------------|
| | | | | | Feb. | March |
| Rapeseed meal 34% | 0.84 | 1.06 | 2.13 | 2.49 | 2.14 | 2.04 |
| Soyabean meal 44% | 1.00 | 1.22 | 2.38 | 2.27 | 2.03 | 2.04 |
| Groundnut meal 50% | 0.76 | 0.84 | 1.83 | 2.01 | 1.64 | 1.51 |
| Groundnut, expeller 54% | 0.88 | 1.06 | 2.30 | 2.43 | 2.04 | 1.86 |
| Fishmeal 65% | 1.05 | 1.47 | 3.40 | 4.08 | 3.10 | 3.41 |

Source: Figures derived from prices given in *Oil World Semi-Annual*, May 1974, Mielke & Co., Hamburg.

Although the price of protein is the major factor affecting the price of the meal, other considerations may contribute to the preference for one meal over another. Rapeseed meal is a high protein meal with a content sometimes as high as 43%, although the more usual level is around 38%–39%, and generally the quality of the protein is marginally higher than that of soya bean meal. However, the use of rapeseed meal is limited because of toxic elements in the feed which may have an adverse effect on livestock. The chief problems which have been encountered when including rapeseed meal in feedstuffs have related to palatability, nutritional goitre, depressed growth rate and impaired reproductive performance of the animals. These problems are associated with the presence of isothiocyanates and oxazolidinethione, which are formed from precursors known as glucosinolates or thioglucosides, under influence of the enzyme myrosinase.¹¹

Processing methods can eliminate myrosinase to some extent. Usually this is done by heating the rolled seed in the cookers, before expelling, as rapidly as possible to 90°C. The meal can then be solvent extracted. However, there is always a risk that myrosinase may be reintroduced possibly from a different batch of seed or meal and therefore it is felt that seed breeding is where the eventual elimination of myrosinase probably lies. A recent paper¹² has predicted that by 1976/77 in both Canada and France, low glucosinolate, low erucic varieties of *Brassica napus* should be obtained. At the present time, however, the use of rapeseed meal in animal feed is limited. Upper limits of inclusion have been recommended at: adult cattle 10%, fattening pigs 5% laying hens 3% and broilers 10%.

COMPOUND FEEDING IN THE UK

The structure of the compound feed industry and its prospects ultimately affect the demand for the raw materials used. The UK has traditionally been a large consumer of compound animal feeds.

A survey of the major import markets for oilcakes was completed by the UNCTAD/GATT International Trade Centre in 1972.¹³ This study included the UK market and some parts of the following information are based on the ITC findings.

Between 1966/67 and 1969/70 UK consumption of concentrated feeds rose from 17.3 to 18.6 million tonnes. Consumption in 1971/72 was 19.0 million tonnes. Up until 1972 this rise in consumption benefited mainly barley, which had the advantage of availability for on-farm feeding and was relatively cheap.

Within the increased total consumption of animal feeds, the consumption of oilcakes and meals remained rather stable. Table XII below shows UK disposals of oilcake and meal between 1966 and 1973.

Table XII
United Kingdom disposals of oilcake and meal 1966–1973

| | '000 tonnes | | | | | | | |
|-------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|
| | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
| Oilcake and meal | 1 554 | 1 376 | 1 330 | 1 332 | 1 407 | 1 245 | 1 369 | 1 543 |
| Of which: | | | | | | | | |
| High and medium protein | 1 416 | 1 271 | 1 263 | 1 269 | 1 348 | 1 192 | 1 318 | ... |
| Low protein | 138 | 105 | 67 | 63 | 59 | 53 | 51 | ... |

Note: ... not available

Source: *Annual Abstract of Statistics*, 1974, Central Statistical Office, HMSO, London.

In 1973, disposals of oilcake in the UK were 1.5 million tonnes. This was a distinct improvement on the 1972 figure.

Future progress in the animal feed industry will largely depend on an expansion of livestock numbers. At the present time rapeseed meal is most important as an ingredient in cattle rations. Cattle numbers increased steadily in the UK between 1964 and 1973, with particularly rapid growth rates in 1972 and 1973. By 1973 official figures put cattle numbers at almost 14.5 million. This number is unlikely to be improved on in 1974 because external factors, of which the prime one is the cost of animal feed, have resulted in above average levels of slaughter of young animals which farmers feel they cannot afford to keep until they are fully mature. The long term future for compound feeding stuffs will be dependent partly on use in poultry and swine feeding. At the moment these are areas where rapeseed meal usage is restricted, but with continuing research it is hoped that this problem will be overcome, perhaps as early as 1977.

Other factors which will affect progress of the industry to some extent include the effect of the EEC on British agriculture. World oil meal supplies will also affect the future. After a period of general expansion of oilmeal supplies in the '60s and early '70s owing to an expansion of soyabean production in the US and Brazil, the trade was severely curtailed, partly by the US embargo on soyabean exports in July 1973 and then shortly afterwards by the sudden increases in fuel prices caused by the oil crisis in November 1973 which led to greatly increased freight rates. A further factor which existed throughout this period was the world shortage of fishmeal due to the suspension of the Peruvian anchovy fishing. The effect of these was highly priced meals leading to cutback in demand, as alternative feeds eg grains and cereals became more attractively priced.

PRICE

Price quotations for imported rapeseed meal appeared only sporadically over the period covered by the report and as a result it has been impossible to compile a realistic price series.

Generally speaking the price of rapeseed meal, like other oilseed products, increased over the period. The only prices available for imported meals have been those for Pakistan meal. This is usually sold at a discount to rapeseed meal, from 1974 the cif price of 38% protein content Pakistan meal was around £71.50/tonne. For comparison the ex-store price of UK-produced meal was £73/tonne. The rapid increase in meal prices was a reflection of other factors working in the animal feedstuff market which put pressure on all available feed materials, but particularly on those normally regarded as protein sources. At the peak of the

price rises in mid-1973, the price of rapeseed meal touched £90/tonne and that of its major competitor, soyabean meal, £200/tonne. The subsequent easing of price was due for the most part to the fact that the demand for meal is more elastic than that for food oils. During the shortages of 1973 oil stocks were depleted to an extremely low level which led to a backlog in demand for oil, whilst the demand for oilmeal has not been at such a high level. This generated pressure on meal prices, but not enough to boost oilseed crushings to a level which allowed oil stocks to be built up.

A comparison of meal prices at this time of shortage, however, highlights the fact that the limitations which affect the inclusion of rapeseed meal in animal feed compounds mean that buyers will still pay a substantial premium for soyabean meal. This is shown by Table XIII.

Table XIII

Comparative price discounts of rapeseed meal to soyabean meal

| | Average 1966-68 | 1970 | 1971 | 1972 | 1973 |
|--|--------------------|-------|--------|--------|--------|
| Price of Rapeseed Meal, 34% fob ex-mill Hamburg | 27.09 | 35.00 | 29.19 | 35.97 | 72.59 |
| Discount to soyabean meal US, 44% | 7.35 | -7.92 | -12.75 | -15.59 | -50.57 |

Source: *Oil World Semi-Annual*, various issues, Mielke & Co. Hamburg.

For example Table XIII shows that when the price of rapeseed meal more than doubled between 1970 and 1973 from £35/tonne to £73/tonne the price of soyabean meal (calculated by adding the discount to the rapeseed meal price) rose by a greater proportion. Thus the premium paid for soyabean meal which was almost £8/tonne in 1970 increased by more than sixfold to £51/tonne in 1973.

Once the problems of rapeseed meal are resolved, however, it is thought that the high quality of its protein will make it very competitive.

SOURCES OF COMPETITION TO RAPESEED MEAL

The oilcake industry faces the same problem of interchangeability of products as the vegetable oil industry. The situation is, however, in some respects more complex because of the great variety of products which animal feed compounders can use in their formulae. Generally speaking, rapeseed meal and other oilcakes are regarded as sources of protein for livestock diets. The decision to use rapeseed meal or any of its rival sources of protein therefore depends on the cost of the protein it is providing. In the UK a traditional feature of the market for protein has been the use of cereals to provide a large part of the protein requirements of animals despite their relatively low protein content. Subsidized cereal growing and the existence of Commonwealth Preference helped maintain the use of cereals for this purpose. The crude protein content of the cereals most commonly used for feed compounding is 9–12% whilst that of oilcake is in the range of 20–50%¹⁴. Subsidies led to an increase in domestic cereal growing so that barley in particular remained cheap enough to increase its share in the compound mix from around 65% in 1960/61 to almost 73% in 1969/70¹⁵. At the same time the UK tariff structure hindered the growth of the oilcake market by giving an incentive to the importation of cereals and therefore the UK demand for oilcake remained limited.

However, the entry of the UK into the EEC (see below) altered the situation and most spokesmen see a shift from cereals to materials which are sources of energy

alone, such as cassava and citrus pulp. One would therefore expect to see a recovery in oilcake consumption. Two developments perhaps already show the beginning of this trend.

Firstly, the growing of rapeseed in the UK has become an economic proposition for farmers because of the Common Agricultural Policy and secondly it is reported that Unilever is planning to expand the oil mill opened in 1972 from a capacity of 400,000 tonnes to one million tonnes by 1975¹⁶. This is in expectation of a growing British demand for oil and protein. It would therefore seem in the present world climate of protein shortage and high cereal prices, that the market for any oilcake is assured if competitively priced. The general opinion of UK traders contacted in the course of this survey was that rapeseed, soya and sunflower meal would dominate the UK oilcake market within the next few years. Rapeseed meal is likely to be readily available because it is grown throughout the EEC. There is also a possibility that the dual nature of the oilseeds trade may affect the competitiveness of meals from oilseeds. It is acknowledged that there is a world shortage of protein. However, if in order to increase supplies of protein, more oilseeds are grown and crushed, there then could be a glut of vegetable oil, if demand is already well covered by supplies. Meal prices could then rise because, firstly, processors will endeavour to make up losses on oil by charging more for meal and, secondly, because there could eventually be a cutback in oilseed crushing in an effort to redress the demand and supply relationships which will inevitably lead to pressure on meal sources and hence itself stimulate a rise in prices.

At one time the market for rapeseed meal was less assured than it seems now because of the abundance of fish meal and the probability of introducing cheap protein from petroleum. Fish meal supplies have been reduced because of over-fishing of the anchovy grounds off Peru and the likelihood of cheap synthetic protein from oil receded, for the short term at least, with the end of petroleum as a cheap energy source.

The organisation of the trade in the UK

TRADE CHANNELS

All rapeseed entering the UK is crushed eventually by UK processors. The rapeseed can either be bought directly by crushing mills from the exporting country or, where UK seed is involved, usually from growers' co-operatives. More often, transactions are carried out through middlemen in the UK.

In the nine oilseed mills in the UK there is a total capacity for crushing rapeseed of between 200 000 – 250 000 tonnes. This is concentrated in three mills. Present crushing of rapeseed could be increased only if substituted as a crush for other oilseeds, notably soyabbeans. This would not be possible at all mills because of the technical design of the plants involved.

Over the past decade the major trend in the oilseed crushing and related industries has been towards a smaller number of larger companies dominating the market. Government statistics show that by 1970 enterprises employing more than 200 people comprised only 8% of the total number of companies, but accounted for more than 68% of the value of net output. A similar trend can be noted in the major end use industries.

UK produced rapeseed oil and rapeseed meal are distributed from seed crushers to further processors, although, in the case of the larger seed crushers, there is a large degree of vertical integration in respect of the oil refining process and addition of rapeseed meal to feed compounds. Rapeseed oil or meal which is not accounted for by these operations is either distributed to other refiners, normally operating in the same area as the mill, or to compounders, who are also found clustered near port areas. In fact, rapeseed meal entering the UK is channelled predominantly through Liverpool and Hull, where two of the largest seed crushers are based.

At this stage in the trading process imported supplies of rapeseed oil and rapeseed meal join the supplies of UK produced oil and meal. The trade in imported oil would appear to be very small, with only small quantities being dealt with on an irregular basis by middlemen. However, all crude oil in the UK is refined by refiners and then the majority supplied to bottlers of vegetable cooking oils, margarine blenders, biscuit manufacturers etc. Again, many of the manufacturing processes are part of a vertically integrated operation. Small quantities of rapeseed oil are also sold to dealers, mainly for speculative purposes.

In rapeseed meal trading brokers are of particular importance. Generally speaking they take a $\frac{1}{2}\%$ commission on a transaction from the buyer only. On some occasions, because of the preferences of UK millers, one broker may have to buy through another broker and in that case each broker receives $\frac{1}{4}\%$. The trade is also split into dealers who often specialise in meal from a particular geographical source. For instance, meal from India and Pakistan is generally handled by one trader. He will only buy from particular mills in these countries, as these are the

ones where quality is likely to be better and, furthermore, consistent. Rapeseed meal is also in some cases used directly by firms who both crush and compound animal feeds. The remainder of the meal in the market is directed to the several hundred UK compounding establishments for inclusion in animal feed formulae. However, the bulk of UK trade in rapeseed meal is handled by a small number of very large companies.

QUALITY

The quality demanded in rapeseed and its products varies according to the end-uses envisaged. Most rapeseed and rapeseed products are used for edible purposes; the oil in the food industry and the meal for animal feed. In these cases rapeseed of a low erucic, low glucosinolate content, is desirable. However for oil to be used in technical applications a high erucic acid content is desirable. The minimum standards of quality for rapeseed are strictly controlled by EEC regulations because of the payment system operating under the CAP.

The quality of rapeseed oil is generally governed by its erucic acid content. For the majority of technical uses it is essential that the erucic acid content is around a minimum of 40% and where the production of fatty acids is involved a content of some 50% is considered desirable. Rapeseed oil for edible use is traded on a free fatty acid basis and on a moisture and admixture basis. There is no demand from vegetable oil blenders or animal feed compounders for rapeseed oil or meal with mustard seed residue in it. It is therefore very important that growers of rapeseed, in areas where mustard seed is also likely to be present, try to eliminate this. It is because of the presence of mustard-like substances in meal from Asia that it is sold at a discount on the UK market and, when it is handled, contracts are particularly stringent concerning the quality of consignments.

The quality of rapeseed meal bought is gauged above all by the protein content of the meal. Generally speaking the protein content of the meal varies between 38% and 39%. Most of the rapeseed meal used in the UK is processed by pre-pressing and then solvent extraction which leaves an oil content of about ½% in the final product. Rapeseed meal from seed processed by expellers is also available. This has a higher oil content than solvent extracted meal.

HANDLING

Most oilcake reaching the UK is in bagged form. There is, however, a trend towards bulk handling, although only one of the major rapeseed meal ports of entry, Liverpool, is equipped for bulk unloading. Transhipments also play a large role in the UK trade and some compounders save between £4 and £5 tonne by directly discharging the cargo from ships by pneumatic conveyor into quayside silos. This not only saves on landing charges, but also saves warehousing costs, which may be as high as £5/tonne.

An additional cost to importers is freight charges and these more than doubled after the November 1973 oil crisis. One trade contact was paying £3/ tonne on shipments from Rotterdam to London before November and £7/tonne afterwards.

METHODS OF BUYING

All rapeseed handled in the UK is bought on contracts developed by the main trade associations.

The main contracts used by buyers of rapeseed are the Federation of Oils, Seeds and Fats Associations Ltd. (FOSFA) contracts, numbers 12 and 26. Both contracts are on a cost, freight and insurance basis.

The basic difference between these contracts concerns the ascertaining of the quality of the seed. Seed bought under the terms of contract 12 is subject to a sampling procedure on arrival at the port, after the sorting out of damaged seed and sweepings. Samples of sound seed are then sent to FOSFA who determine by analysis the quantity of non-oleaginous substances and jambaseed contained in the samples. Jambaseed is the oilseed of *Eruca sativa* which is often mixed up with the rapeseed in shipments and causes particular concern in shipments of Asian origin. Once the percentage of admixture has been ascertained from the sample, all non-oleaginous substances are considered valueless. The basis of the contract is pure rapeseed and therefore the buyer is accorded an allowance equal to the percentage of admixture contained in the shipment. If the admixture exceeds 3%, the excess of 3% shall be doubled. In the case of Indian Rapeseed, jambaseed up to 5% is considered as worth half the contract price of the rapeseed and any excess beyond 5% is taken as valueless.

Under contract 26, which deals solely with rapeseed of European origin, the quality of shipments is considered differently. On arrival the rapeseed is assumed to have an oil content of 42% on a 'telle quelle' (such as it is) basis, tested either by petroleum ether or normal hexane; 9% moisture and 2% admixture. Where the oil, moisture and admixture contents vary from the norm set by the contract, the buyer is accorded certain allowances. For oil content, a reciprocal allowance to buyers or sellers of 1¼% of the contract price for each 1% excess or deficiency of oil content is allowed. Where the moisture content exceeds the basis, the buyer is entitled to an allowance of 1% of the contract price for each 1% of moisture in excess of the basis up to 10%. If the moisture content exceeds 10% the buyer reserves the right to reject the shipment. Where the admixture content exceeds up to 3% of the basis, the buyer is entitled to an allowance of 1% of the contract price for each 1% admixture in excess of the basis. An allowance of 2% for each 1% of admixture in excess of 3% up to 4% is then allowed and the buyer has the right to reject a parcel containing over 4% admixture.

Transactions in rapeseed oil, possibly because the volume of rapeseed oil imported into the UK is relatively small, are not made on a specific FOSFA contract. However, the contract generally used is No. 54 for Vegetable Oils in Bulk.

Rapeseed meal is bought on contracts of the Grain and Feed Trade Association (GAFTA). The contracts most commonly used are No. 6: 'Contract for Imported Feeding Stuffs in Bags, cif. Terms.' and Contract No. 100: 'Contract for Shipment of Feeding Stuffs in Bulk, Tale Quale, (such as it is) cif Terms.' In a similar way to the rapeseed contract, both these contracts have clauses offering compensation to the buyers should the shipments have less than the protein content stated or more admixture than is stated. Rapeseed meal has a particular problem because of the possibility that mustard seed may be present.

A spokesman from a UK firm did, however, mention that it is usually the case when contracting to buy or sell rapeseed meal that the meal is stated to be free of mustard seed, but not necessarily free of mustard-like substances. This problem arises mostly in meals of Pakistan or Indian origin and the presence of volatile mustard oil, expressed as allyl isothiocyanate (AIC), can vary widely. The official analysts for GAFTA reported in the 1972/73 period that the presence of such oil in samples tested varied between 0.2% and 1.2%, reflecting the variation in botanical composition of these meals¹⁷. The different processing techniques used can also affect thiocyanate levels.

The UK tariff structure

United Kingdom import duties applicable from 1st January 1975 on rapeseed and rapeseed products are listed in Appendix B. The rates of duty existing in the original six members of the EEC are listed alongside.

With the accession of the UK to the EEC in 1973 arrangements were made for the alignment of UK tariffs with those of the EEC. The alignment was designed to be carried out in four stages and completed by July 1st 1977. The first step towards alignment took place on January 1st 1974 and involved the elimination of 40% of the difference between the original UK tariff and the Common Customs Tariff (CCT): where the old UK tariff did not differ from the CCT by more than 15% there was a direct move to the CCT. As a result of the move towards the CCT, duties of 40% of the difference between the former preferential rates for Commonwealth countries (zero for oilseeds, vegetable oils and meals) and the CCT were imposed on imports from the Commonwealth Preference Area with the exception of those countries in the Standstill Commonwealth Preference Area (broadly the 'Annex VI' countries and the dependent territories) which continued to be admitted duty-free. The Annex VI countries are listed in Appendix C. On January 1st 1975, the second stage of the alignment took place, involving the elimination of a further 20% of the differences between the original UK tariff and the CCT. There are two further steps to be taken before the UK tariff and CCT are identical and these will involve eliminating the remaining differences between the two tariffs. The actual dates for these moves, which will each be by 20% of the remaining differences, are January 1st 1976 and July 1st 1977.

Broadly speaking the CCT to which the UK must adapt gives seed-crushing industries access to duty free oilseeds and also allows vegetable oilcakes, such as rapeseed meal, to enter duty-free. Vegetable oils, particularly when refined, attract duty to protect, to some extent, refiners in the UK.

Apart from the tariffs set out in Appendix B, some other countries have arrangements with the EEC to allow their products duty-free access to the Community.

The latest agreement is the Lomé Convention, which was signed by forty-six developing countries in Africa, the Caribbean and the Pacific (the ACP) and the nine members of the EEC. The ACP countries are listed in Appendix D. The Convention covers trade and commercial co-operation and financial and industrial co-operation and came into effect on 1/7/75. It is initially to be of five years' duration, but may become permanent. The Convention, as it affects rapeseed and rapeseed products, guarantees free entry of these to the EEC. There are, however, safeguard clauses which will only be put into effect if there are considerable changes in the volume of imports and consequent disruption of the market and deterioration in the economic situation of one or more regions of the Community.

The effect of the Lomé Convention on trade is that exports from the Annex VI countries (Appendix C) maintain their duty-free entry into the UK, but also gain duty free access to the other members of the EEC, where previously they had been subject to the CCT. The Lome Convention also includes those countries which were signatories to the Arusha Agreement and the Yaounde Convention and their trade concessions have either been maintained or in some cases extended.

The tariff may also be further altered owing to the regulations governing oilseeds, vegetable oils and cake under the Common organisation of the Market for Oils and Fats. This organisation, established as part of EEC policy, covers all oilseeds, oilcakes, and vegetable and marine oils, including hydrogenated oils and prepared edible fats but excluding butter, lard, tallow and other animal fats and oils. The aim of the organisation is to eliminate barriers to intra-Community trade, establish a common tariff against imports from non-members and set up a managed common market within the Community. The system as applied to oilseeds is designed to protect oilseed crushers in the EEC while at the same time giving financial support to Community – produced seed. The way in which the tariff is affected by the policy is that a levy may be imposed when Community producers are threatened either by the quantity or by the low price of imports made possible by subsidies introduced in the exporting countries. It is anticipated that a levy on subsidised imports is only likely in the case of the vegetable oils.

The European Economic Community

PRODUCTION AND TRADE IN RAPESEED AND RAPESEED PRODUCTS: A COMMENT ON THE STATISTICS

The preceding chapters dealt in detail with the UK demand for rapeseed, its oil and meal: the following section is confined to a description of the growth of EEC production and trade up to 1972. In 1973 the UK entry into the Common Market led to forecasts of greatly increased UK production of rapeseed because of the advantages afforded the crop by the working of the Common Agricultural Policy (CAP). As the following section shows, the CAP has already caused a change in the pattern of trade affecting the original six EEC members.

THE MARKET FOR RAPESEED

Production of rapeseed in the EEC increased from 238 000 tonnes in 1961 to 1.0 million in 1972. (18) This represents an increase of more than 300% in ten years and has been almost entirely due to the subsidies given to farmers under the Common Organisation for Oils and Fats, which is the body handling production and trade in oilseeds and oilseed by-products under CAP.

France is the major producer of rapeseed in the EEC; between 1964 and 1972 (Table A1) production increased from 247 000 tonnes to 722 000 tonnes. West German output was next in importance in the Community; 249 000 tonnes were produced in 1972.

Production is on a much smaller scale in the other EEC countries; 1972 figures were as follows:—Netherlands 45 000 tonnes; Belgium/Luxembourg 3 000 tonnes and Italy 6 000 tonnes. (18)

Apart from being a producer of rapeseed, the EEC is also a substantial importer. A varying proportion of imports are, however, accounted for by intra – EEC trade as Table XIV shows.

Individual countries' imports of rapeseed in the period of 1961–1971 are listed in Tables A12–A16. Total EEC imports for the period rose from 128 000 to 857 000 tonnes. The largest market for such imports was Italy (Table A14), not an important rapeseed producer, but a country with a large seed-crushing industry drawing on many sources, of which fellow EEC members are now the most important. In 1971 other EEC countries provided Italy with 66% of her rapeseed requirements. Belgium/Luxembourg was another country relying on EEC members for over half its rapeseed supplies in most years. However, imports of rapeseed were relatively small; only 4,000 tonnes in 1971. Imports of rapeseed into West Germany, France and the Netherlands were largely accounted for by third countries outside the EEC. Table XIV illustrates the development of EEC dependence on EEC supplies between 1961 and 1972.

Table XIV
Intra – EEC imports of rapeseed 1961 – 1972

| Year | Total EEC imports of rapeseed | EEC imports from other EEC members | % of total imported from EEC members |
|------|-------------------------------|------------------------------------|--------------------------------------|
| 1961 | 128 190 | 9 236 | 7.2 |
| 1962 | 169 412 | 36 129 | 21.3 |
| 1963 | 151 786 | 29 849 | 19.7 |
| 1964 | 106 273 | 44 191 | 41.6 |
| 1965 | 257 955 | 55 064 | 21.3 |
| 1966 | 320 461 | 72 328 | 22.6 |
| 1967 | 317 592 | 75 908 | 23.9 |
| 1968 | 297 863 | 87 018 | 29.2 |
| 1969 | 365 735 | 185 411 | 50.7 |
| 1970 | 355 192 | 186 775 | 52.6 |
| 1971 | 867 300 | 268 090 | 31.3 |
| 1972 | 683 166 | 302 450 | 44.3 |

Source: 1961 – 1971 Individual trade statistics of EEC members
1972 – Eurostat Foreign Trade – Analytical Tables, 1972/1-XII Nimex, Statistical Office of the European Communities

As Table XIV shows intra – EEC, trade increased in importance over the period. Imports do not, however, show the complete EEC market picture as the EEC is both a producer and exporter of rapeseed. Table XV shows the net EEC market for rapeseed, ie. production plus imports less exports, between 1961 and 1972.

Table XV
The net EEC market for rapeseed, 1961 – 1972

| Year | France | Germany | Italy | Netherlands | Belgium/Luxembourg | Total EEC |
|------|--------|---------|-------|-------------|--------------------|-----------|
| 1961 | 109.3 | 98.2 | 73.8 | 0.3 | 1.8 | 283.4 |
| 1962 | 93.7 | 145.7 | 115.6 | 8.7 | 3.5 | 367.2 |
| 1963 | 75.1 | 140.9 | 97.6 | 1.3 | 0.9 | 315.8 |
| 1964 | 135.2 | 138.3 | 69.4 | 0.8 | 1.8 | 345.5 |
| 1965 | 216.1 | 203.1 | 141.2 | 22.6 | 3.9 | 586.9 |
| 1966 | 193.8 | 186.2 | 220.4 | 10.3 | 2.8 | 613.5 |
| 1967 | 334.3 | 184.0 | 226.5 | 26.0 | 4.9 | 775.7 |
| 1968 | 359.3 | 271.0 | 154.8 | 17.0 | 4.7 | 806.8 |
| 1969 | 325.8 | 272.8 | 172.2 | 20.3 | 3.9 | 795.0 |
| 1970 | 417.2 | 210.1 | 226.6 | 36.4 | 2.7 | 889.0 |
| 1971 | 627.9 | 338.6 | 381.1 | 73.7 | 3.9 | 1425.2 |
| 1972 | 614.0 | 176.0 | 268.0 | 85.0 | 7.0 | 1150.0 |

Source: Trade statistics of individual countries
1972 – FAO Production and Trade Yearbooks, 1972, FAO Rome

As Table XV illustrates, the EEC net market for rapeseed increased substantially over the period to more than 1.4 million tonnes by 1971. Available data for 1972, not shown fully in the statistical appendix to the report, indicate a fall in the net market for rapeseed amongst the six original members of the EEC. Production reached 1.0 million tonnes in 1972, compared with 900 000 tonnes in 1971, with increases of around 11% and 9% respectively registered in the major producing countries, France and Germany, (Table A1). However, increased exports (Table A2), notably from the Netherlands up by 170%, Belgium, up by 130%, and France up by 29% led to a smaller net market in 1972. Exports of rapeseed from EEC countries are shown in Tables A17 – A20 inclusive. Italy has no significant production or exports of rapeseed and therefore figures do not appear in the statistical appendix.

Intra-Community trade dominated the EEC market between 1961 and 1972. Exports to third countries were destined mainly for other European markets and North Africa. Algeria in particular received large quantities of French rapeseed.

THE MARKET FOR RAPESEED OIL

Trade statistics of the individual EEC members for the period 1961 – 1971 are shown in Tables A21 – A30. These include in some cases quantities of mustard seed oil. Also, in some of the Tables a distinction is made between rapeseed oil suitable for industrial use and that used in edible products. A further breakdown of the oil traded in raw or refined forms may also be given.

An analysis of the Tables shows that EEC exports of rapeseed oil, mostly crude, exceeded imports in the period 1961 – 1971. The countries where rapeseed oil imports were of particular significance were Italy, West Germany and the Netherlands. Italian imports (Table A23) were relatively small until 1967 when they reached 20 000 tonnes. Thereafter, they fluctuated between 22 000 and 29 000 tonnes. In West Germany and the Netherlands imports generally expanded until the late 1960's. In West Germany they peaked at over 27 000 tonnes in 1967 and 1968 (Table A22) and in the Netherlands (Tables A24 and A25) peak imports of 30 000 tonnes were attained in 1968.

The main EEC exporter of rapeseed oil was West Germany. Exports (Table A28) rose from 4 000 to 68 000 tonnes in the period 1961 to 1971. Virtually all these exports were industrial grades of oil. During the period, an increasing proportion of exports was destined for other EEC members, with Italy becoming the largest single buyer. Next in importance as an exporter was France, (Table A27). In 1970 her exports were 39 000 tonnes, of which 31 000 tonnes were edible oil. Again, the majority of exports was directed to other EEC members or associates. The summary data in Table A4, show that French exports of rapeseed oil continued to expand after 1970. In 1971 and 1972 exports of rapeseed oil were 60 000 and 104 000 tonnes respectively. The Netherlands also exports rapeseed oil and shipments increased steadily throughout the period, reaching 23 000 tonnes in 1972 (Tables A4 and A29). Belgium exported no more than 2 500 tonnes in any one year covered by the period (Table A30). Italian exports were negligible. By 1972 intra-EEC trade in rapeseed oil accounted for 92% of Community imports and 56% of exports.¹⁹

Apart from the trade in rapeseed oils in the EEC substantial quantities are retained for domestic consumption in the member countries. Table XVI below shows EEC production and consumption of rapeseed oil for the period 1968/69 and 1971/72. The years covered are the crop years July/June. The Table points up factors not shown by the trade statistics. The major development in the EEC was the rise in production of rapeseed oil, an increasing proportion of which was supplied by indigenous production although the progress of Italy, with its almost total reliance on imported supplies, proved the exception to this trend. The two most important producers of rapeseed oil in the Community were France and Italy. French production relied heavily on indigenous supplies whilst Italy was dependent on imported seed. These countries together accounted for an average 70% of total production in the period. Taking into account the variation in stocks and the trade in rapeseed oil, disposable supplies available within the Community were, with the exception of 1969/70, less than total production. The two largest internal markets for rapeseed oil in the period were France and Italy. French demand rose from 114 000 tonnes in 1968/69 to 192 000 tonnes in 1971/72 and Italian from 103 000 tonnes to 210 000 tonnes over the same period. Supplies in the other member countries fell on average over the period. In particular, the Dutch and Belgian markets contracted to little more than a third of their 1968/69 levels. In 1971/72 respective figures for the markets were 8,000 and 4,000 tonnes. The West German market also contracted slightly and was 56 000 tonnes in 1971/72. However, as the trend in total supplies available in the EEC indicated, any contraction in one market was more than compensated for by expansion of the French and Italian markets.

Only a small proportion of the total supplies of rapeseed oil available in the EEC are used industrially and the only market where quantities of any size were used in the period covered by Table XVI was France, where 9,000 tonnes were used

Table XVI

Rapeseed oil: production and consumption in the EEC 1968/69 – 1971/72

| | Production from indigenous rapeseed | Production from imported supplies | Total production | Variation of stocks | External trade | Disposable supplies | Industrial and non-food usage | Losses | Human total | Consumption kg head |
|-----------------------------|--|--------------------------------------|---------------------|------------------------|----------------|------------------------|----------------------------------|--------|----------------|------------------------|
| Year and countries | | | | | | | | | | |
| 1968/69 | | | | | | | | | | |
| Federal Republic of Germany | 63 | 49 | 112 | -7 | 74 | 24 | 69 | - | 69 | 1.1 |
| France | 127 | 17 | 144 | +16 | 23 | 9 | 114 | - | - | 2.3 |
| Italy | 2 | 73 | 75 | +1 | 0 | 29 | 103 | 1 | - | 1.9 |
| Netherlands | 0 | 5 | 5 | 0 | 11 | 30 | 24 | 1 | 0 | 1.8 |
| Belgium and Luxembourg | 1 | 0 | 1 | - | 2 | 14 | 13 | - | - | 1.3 |
| Total EEC | 193 | 144 | 337 | +10 | 110 | 106 | 323 | 2 | 0 | 321 |
| Intra-EEC trade | 60 | 60 | | | 17 | 71 | | | | |
| Net EEC | 253 | 84 | 337 | +10 | 39 | 35 | 323 | 2 | 0 | 321 |
| | | | | | | | | | | 1.7 |
| 1969/70 | | | | | | | | | | |
| Federal Republic of Germany | 45 | 36 | 81 | -7 | 37 | 12 | 63 | - | 63 | 1.0 |
| France | 112 | 11 | 123 | -12 | 29 | 1 | 107 | 5 | - | 102 |
| Italy | 2 | 72 | 74 | -4 | 2 | 23 | 99 | - | - | 2.0 |
| Netherlands | 3 | 3 | 6 | -2 | 8 | 18 | 18 | 1 | 1 | 1.8 |
| Belgium and Luxembourg | 0 | 1 | 1 | - | 0 | 5 | 6 | - | - | 1.3 |
| Total EEC | 162 | 123 | 285 | -25 | 76 | 59 | 293 | 6 | 1 | 286 |
| Intra-EEC trade | 87 | 87 | | | 49 | 49 | | | | |
| Net EEC | 249 | 36 | 285 | -25 | 27 | 10 | 293 | 6 | 1 | 286 |
| | | | | | | | | | | 1.5 |
| 1970/71 | | | | | | | | | | |
| Federal Republic of Germany | 47 | 56 | 103 | +5 | 63 | 13 | 48 | - | - | 48 |
| France | 147 | 42 | 189 | +12 | 52 | 9 | 134 | 8 | - | 126 |
| Italy | 2 | 129 | 131 | +9 | 0 | 51 | 173 | - | - | 173 |
| Netherlands | 6 | 18 | 24 | +1 | 18 | 6 | 11 | 1 | 1 | 9 |
| Belgium and Luxembourg | 0 | 1 | 1 | - | 1 | 3 | 3 | - | - | 3 |
| Total EEC | 202 | 246 | 448 | +27 | 134 | 82 | 369 | 9 | 1 | 369 |
| Intra-EEC trade | 96 | 96 | | | 76 | 76 | | | | |
| Net EEC | 298 | 150 | 448 | +27 | 58 | 6 | 369 | 9 | 1 | 359 |
| | | | | | | | | | | 1.9 |
| 1971/72 | | | | | | | | | | |
| Federal Republic of Germany | 46 | 56 | 102 | +2 | 57 | 13 | 56 | 0 | 0 | 56 |
| France | 162 | 97 | 259 | -3 | 80 | 10 | 192 | 9 | 0 | 183 |
| Italy | 2 | 160 | 162 | -11 | 0 | 37 | 210 | 0 | 0 | 210 |
| Netherlands | 10 | 13 | 23 | +1 | 26 | 12 | 8 | 0 | 0 | 8 |
| Belgium and Luxembourg | 0 | 1 | 1 | 0 | 4 | 7 | 4 | 0 | 0 | 4 |
| Total EEC | 220 | 327 | 547 | -11 | 167 | 79 | 470 | 9 | 0 | 461 |
| Intra-EEC trade | 122 | 122 | | | 72 | 72 | | | | |
| Net EEC | 342 | 205 | 547 | -11 | 95 | 7 | 470 | 9 | 0 | 461 |
| | | | | | | | | | | 2.4 |

Source:—Agricultural Statistics — Balance — Sheets for Fats and Oils, various issues, Office for Official Publications of the European Communities, Luxembourg.

in 1971/72. France was also, over the period, the country with the largest per capita consumption of rapeseed oil. Consumption between 1968/69 and 1971/72 averaged 2.6 kg/capita. Italy's consumption, however, increased at such a rate that it exceeded French consumption in 1971/72 at 3.9 kg/capita. West German, Belgian and Dutch consumption per capita fell in the period.

In the light of the developments affecting rapeseed oil marketing in 1974 it remains to be seen whether consumption figures will decrease in future.

THE MARKET FOR RAPESEED MEAL

There are two sources of supply of rapeseed meal to the EEC. Firstly, there is rapeseed meal produced by crushing rapeseed within the Community; this may be either indigenous or imported seed. Secondly, the EEC imports rapeseed meal.

There are no published rapeseed meal production figures available for the EEC countries, the production figures mentioned below are based on a calculation of the yield of meal after crushing the net available supplies of oilseed for the period 1961 – 1971. The conversion factor used is 57%¹³. Production of rapeseed meal from such supplies is set out in Table XVII below.

Table XVII
EEC production of rapeseed meal, 1961 – 1972

| Year | France | West Germany | Italy | Netherlands | Belgium/Luxembourg | Total EEC |
|------|--------|--------------|-------|-------------|--------------------|-----------|
| 1961 | 62.3 | 56.0 | 42.0 | 0.2 | 1.0 | 161.5 |
| 1962 | 53.4 | 83.0 | 65.9 | 5.0 | 2.0 | 209.3 |
| 1963 | 42.8 | 80.3 | 55.6 | 0.7 | 0.5 | 179.9 |
| 1964 | 77.1 | 78.8 | 39.6 | 0.4 | 1.0 | 196.9 |
| 1965 | 123.2 | 115.8 | 80.5 | 12.9 | 2.2 | 334.6 |
| 1966 | 110.5 | 106.1 | 125.6 | 5.9 | 1.6 | 349.7 |
| 1967 | 190.6 | 104.9 | 129.1 | 14.8 | 2.8 | 442.2 |
| 1968 | 204.8 | 154.5 | 88.2 | 9.7 | 2.7 | 459.9 |
| 1969 | 185.7 | 155.5 | 98.2 | 11.6 | 2.2 | 453.2 |
| 1970 | 237.8 | 119.7 | 126.9 | 20.7 | 1.5 | 506.6 |
| 1971 | 357.9 | 193.0 | 217.2 | 42.0 | 2.2 | 812.3 |
| 1972 | 350.0 | 100.3 | 152.8 | 48.4 | 4.0 | 655.5 |

Source: Calculated as 57% of net available rapeseed supplies within the EEC, 1961 – 1972, as shown in Table XV above.

As Table XVII shows, total EEC production greatly expanded between 1961 and 1971. Production of 812 000 tonnes in 1971 was just over five times as large as in 1961. The most important producers of rapeseed meal were France, West Germany and Italy. French production was 358 000 tonnes by 1971 and contributed to 44% of total EEC production. West German output expanded steadily, but less spectacularly than the French in the same period, rising from 56 000 tonnes to 193 000 tonnes. Italian production became increasingly important, although virtually all the seed crushed was imported, largely from other EEC markets. In 1972 a downturn in EEC production of rapeseed meal occurred because of reduced supplies in the Community. However, whilst the larger producers lowered their output, that of the two minor producers of rapeseed meal in the Community, the Netherlands and Belgium, increased.

The trade figures for the individual EEC members are listed in Tables A31 – A39 inclusive. EEC imports of rapeseed meal were dominated by those into Belgium/Luxembourg, the Netherlands and West Germany. Belgium/Luxembourg and the Netherlands were not important producers and exporters of meal, therefore their reliance on imports could be expected. In 1971 Belgium/Luxembourg imported 64 000 tonnes (Table A34) and the Netherlands imported 67 000 tonnes (Table A33). Towards the latter part of the period covered by the Tables, both countries

depended on EEC trade for over half their total imports. West Germany was also a substantial importer of rapeseed meal. Her imports were in the region of 68 000 tonnes by 1971, and increasing reliance was placed on EEC supplies. Additional imports were obtained on a sporadic basis from Poland, Chile and Algeria in the period. Neither France nor Italy received large quantities of rape seed meal during the period. The most important exporter of rapeseed meal between 1962 and 1971 was Italy (Table A37). Exports ranged between 25 000 and 83 000 tonnes per annum over the period, with other EEC members accounting for more than half the market in any one year. France (Table A35), was also a major exporter and again the greater part of her exports was to EEC countries. West German exports (Table A36) fluctuated between 20 000 and 66 000 tonnes in the period, but again intra-EEC trade was important, particularly after 1966.

From the production and trade figures discussed above, the net EEC market for rapeseed meal can be calculated. The resulting figures are listed in Table XVIII for the period 1963 – 1972.

Table XVIII

The net EEC market for rapeseed meal 1963 – 1972

| Year | France | West Germany | Italy | Netherlands | Belgium/ Luxembourg | Total EEC |
|------|--------|--------------|-------|----------------------|------------------------|--------------|
| 1963 | 54.6 | 71.7 | 23.7 | 32.2 | 17.6 | 199.8 |
| 1964 | 72.6 | 96.9 | 14.3 | 21.6 | 18.4 | 223.8 |
| 1965 | 98.0 | 121.3 | 28.2 | 38.9 | 27.1 | 313.5 |
| 1966 | 54.0 | 115.9 | 57.9 | 49.7 | 37.7 | 315.2 |
| 1967 | 155.3 | 120.7 | 46.1 | 40.2 | 32.9 | 395.2 |
| 1968 | 128.8 | 130.9 | 59.2 | 49.5 | 38.6 | 407.0 |
| 1969 | 86.0 | 118.0 | 65.2 | 70.6 | 45.5 | 385.3 |
| 1970 | 178.3 | 145.0 | 58.5 | 53.0 | 36.4 | 471.2 |
| 1971 | 223.6 | 202.8 | 142.1 | 103.8 | 65.4 | 737.7 |
| 1972 | 227.0 | 104.4 | 64.6 | 159.0 ^(a) | 73.2 ^(a) | 628.2 |

Note (a) Export figures for 1972 obtained from FAO, *Trade Yearbook*, 1973, Rome.

Source: Table XVII and Statistical Appendix.

Table XVIII indicates an expansion of the total EEC market over the period 1963 – 1971. A record total of 738 000 tonnes was registered in 1971 due to large increases in demand from all the EEC countries, notably Italy at 143% above the 1970 level. The Netherlands and Belgium registered increases of 96% and 80% respectively in 1971. France and West Germany, the two largest markets, also increased their demand, but at a more moderate rate. It is thought that the heavy demand increases for rapeseed meal in 1971 resulted from the overall shortage of some alternative feedstuffs. In 1972 the market for rapeseed meal declined, with substantial downturns primarily caused by reduced production in Germany and Italy. The market would have been even smaller if it had not been for the expansion which occurred in the Netherlands and Belgium.

The overall picture for rapeseed meal within the EEC has therefore been one of erratic growth. The real position of rapeseed can, however, only be judged by its strength amongst competing feedstuffs.

COMPETITION WITH RAPESEED MEAL

It would appear from a recent study that, of the feedstuffs available to the six original members of the EEC, more reliance is being placed on compound animal feed²⁰. Cereals occupy the premier position in feedstuffs, but they only have a 9 – 11% protein content. In 1971/72, 67.7 million tonnes of cereals were consumed. In the same period consumption of oilcake was some 14.2 million tonnes, of which more than half was accounted for by soya. It can therefore be

seen that rapeseed occupies a fairly small place amongst feedstuffs. In 1971 it accounted for only 5% of total oilcake consumption. However, although rapeseed meal accounts for only a small proportion of total oilcake consumption it would seem likely that the total volume of rapeseed meal consumed will continue to rise, given the pressure of demand on supplies of high protein feedstuffs. Ultimately, any growth in demand for a particular feedstuff rests upon the demand for meat. The EEC study mentioned above has projected that the average rate of increase between 1973/4 and 1977/78 is likely to be: 2.4% for beef; 2.9% for pork, 5.1% for poultry and 1.3% for milk. The report also states that although the demand for compound feeding stuffs increased considerably over the past ten years, it seems unlikely that this rate will continue. Under these conditions, therefore, it was estimated that demand for protein within the Community would expand by 3% per year, between 1973/74 and 1977/78, or at the same rate as animal production. This corresponds to an average annual increase of around 600 000 tonnes of soyabean meal or products supplying equivalent protein. Given this projected increase, how will supplies meet the demand?

In the ten years 1961 – 1971 world production of oilcake increased from 35.4 to 55.6 million tonnes; that of fish meal from 2.6 to 5.6 million tonnes. Most of this increase was accounted for by soyabean meal which reached 31.9 million tonnes in 1971. Unfortunately, production of other oilcakes has remained static because of a downturn in some materials, notably groundnuts. In 1966 other oilcakes accounted for 8 million tonnes of world supplies; in 1973 the situation was unchanged. Therefore in order to avoid a shortfall in world supplies the report concluded that soyabean production would have to increase by 2 million tonnes annually. Such an increase could be made probably only by displacing other major crops, such as cotton and maize, in the US in particular. Such a change would depend naturally on favourable price advantages accruing to soya to make planting attractive to farmers.

Given this situation the European Economic Community, the world's largest market for oilcake, has reviewed its own internal resources. As rapeseed is important amongst these, it would seem likely that its cultivation will continue to be encouraged. Below is a summary of the protein sources available in the EEC together with their prospects.

Oilcake from rapeseed, an average of 550 000 tonnes per year, is the largest single source of high protein feedstuffs within the Community. However, the meal still faces limitations in its use because of the glucosinolate content. The use of the oil for edible purposes is also limited.

Production of sunflowerseed, whose cake at present amounts to about 40 000 tonnes per year, could be developed, but the protein quality of sunflower cake is deficient and has to be improved, usually by addition of lysine. Production of this is almost non-existent in the EEC at the present time. However, sunflowerseed does have an advantage over rapeseed as the oil is more valued as an edible oil because of its low saturated fat content.

Attention is also being directed increasingly to the cultivation of soyabbeans in the EEC. This is technically possible in France and is already taking place on a small scale in Italy. Under favourable conditions production of soyabbeans could reach about 100 000 tonnes by 1977/78, but this represents only 1.7% of the total Community oilcake requirements and is less than the projected annual increase in demand. Also, any development in soyabean production could only take place at the expense of the acreage given over to cereals, which in turn would lead to another deficit within the Community. Moreover both sunflowerseed and soya have significantly lower yields per hectare than rapeseed. At present sunflowerseed production is limited to France and Italy. Yields of these oilseeds compared to rapeseed are listed below.

Table XIX

Yield per hectare of rapeseed, sunflowerseed and soyabean in the EEC.

| | 1961 - 65 average | 1970 | 1971 | 1972 |
|-------------------|----------------------|------|------|------|
| Rapeseed | 1922 | 2238 | 2412 | 2507 |
| Sunflowerseed (1) | 1597 | 1958 | 2826 | 1775 |
| Soyabeans (2) | 638 | 714 | 714 | 714 |

Notes (1) France and Italy only. (2) Italy only.

Source: FAO Production Yearbook, 1972, FAO, Rome.

As the table shows the yields of soya are well below those of rapeseed and although those of sunflower are closer, the volume of cake produced from crushing is still less than that from average yields of rapeseed.

Linseed cake is also available within the EEC. At the moment some 22 000 tonnes are produced. However, its use is limited to cattle and, also, the fairly low yield of cake from linseed when crushed is an obstacle to its development.

Other possible protein sources are lucerne and clover, but production has declined over the past ten years although lucerne gives the best yield of protein per hectare within the EEC. Given this, the EEC is likely to encourage production of dried lucerne. Another crop which has been in decline is the field bean and again its development might be encouraged although it cannot be used in unlimited quantities in pig and poultry feeds. However, although development of this crop might allow an import saving of 600 000 tonnes of soyabean meal, it would also lead to an addition cereal requirement of about 600 000 tonnes. Another possibility is urea, but this must be used with cereals (5 kg of maize and 1 kg of urea = 6 kg of soyabean meal). It is therefore unlikely that it could be adopted in the EEC unless cereal prices were considerably lower. Lastly, there is the possibility of using protein from petroleum sources. Already 20 000 tonnes are produced by two factories in the EEC with production for 1978 envisaged at 850 000 tonnes. However, the future for this particular source of protein will depend on its price competitiveness and continuity of the supply of oil. After the recent oil crisis the future of this product is uncertain.

THE WORKING OF THE COMMON AGRICULTURAL POLICY IN RELATION TO RAPESEED

One of the main reasons for the extensive production of rapeseed and the use of its by-products in the EEC is the protection afforded to it by the Common Agricultural Policy (CAP). In the field of oilseeds, the objective of the CAP is to encourage production with a wider aim of increasing self-sufficiency in oils and fats and animal feed.

In order that CAP would be effective a common organisation of the oils and fats market was set up to cover all oilseeds, oilcakes and vegetable and marine oils. The particular system which has evolved set out to protect oilseed crushers in the EEC whilst at the same time giving financial support to seed grown within the EEC. Internal support arrangements apply to the two oilseeds most widely grown in the Community, rapeseed and sunflowerseed. The means by which the policy is carried out are by ensuring that the price system includes the following:

1. the suggested or indicative ("target") price for the whole of the EEC must be sufficiently high to interest producers in growing the crop. This price is fixed annually for the marketing season which runs from July to June in the following year, and is the wholesale price which the Community aims at maintaining at Genoa. Genoa has been chosen because it is the centre of the area in the Community where supplies of rapeseed are shortest.

2. an intervention price is also established, at a figure somewhat lower than the "target" price. This is to assure producers of a market for their rapeseed at a price as close as possible to the "target" price, allowing for market fluctuations. The main intervention price is set for Genoa and then secondary intervention prices are set at other centres. These prices are designed to ensure that seeds move within the Community, from production areas to processors, so that prices in a non-producing area are higher than those in a production area. The geographical locations chosen include the Atlantic ports where many of the oilseed mills are situated and where imported supplies arrive. In the UK, intervention centres include Tilbury and Liverpool. For inland areas where oilseed mills may be situated, intervention prices are also set, and are generally based on the cost of transport from the ports added to the price set at the port.
3. the price system must take into account the world market price; for when the world market price is lower than the "target" price, i.e the wholesale price at Genoa, a subsidy is granted for rapeseed harvested and processed in the Community. This is normally equal to the difference between the two prices. The world market price is determined and the subsidy is fixed at least once a week in Brussels. If quotations for seed are not available the world market price is calculated from the current value of the average quantities of oil and cake obtained from processing 100 kg. of rapeseed, with a deduction for the cost of processing. A further adjustment is also made to take into account the difference between the profit obtained from processing rapeseed and its chief competitor, soyabeans. If it is more profitable to process rapeseed then the world market price may be increased by as much as the difference in profit, and vice-versa. The purpose of this adjustment is to prevent crushers switching their processes from one seed to another because one is more profitable to crush. In practice the system works in such a way that the processor buys seed at a price somewhere between the "target" and intervention prices.

Conclusions and prospects

PRODUCTION

Rapeseed is primarily a temperate crop and is mainly produced in the temperate developed regions of the world, ie Canada and Western Europe. Both areas have increased their output of rapeseed in the last decade, and developing countries in 1972 accounted for only 29% of production. The maintenance of production in Canada and Europe is not, however, assured for the future. The expansion of rapeseed production occurred because it offered a profitable alternative to farmers. In Canada, it replaced wheat acreages when wheat was in surplus, but present indications are that the Canadians may be reducing their acreage of rapeseed because of changing price ratios. In the EEC the production of rapeseed has flourished because of guaranteed prices to farmers and processors. The incentive to EEC farmers is shown by the dramatic increase in UK acreage and the confident predictions of UK spokesmen for continued expansion of production, during the next few years. It is unlikely that in the EEC as a whole acreages of rapeseed will continue to expand as rapidly as in the past. It is thought that the French acreage is probably at a peak, although there is still expansion potential in West Germany.

The EEC policy towards oilseeds may also reflect recognition of the fact that rapeseed acreage may be near its maximum. The Commission's proposals for the 1974/75 marketing season established for the first time a target price for soya-beans. It is hoped that under this incentive EEC countries will be producing 100 000 tonnes of soyabean by 1977/78. This is, however, still quite a negligible proportion of the Community's total soya consumption. At the same time the target price for sunflowerseed was raised by 6%, compared to a 3% increase in rapeseed prices. It was hoped that this would lead to a more satisfactory price relationship between rapeseed and sunflowerseed and encourage sunflowerseed production to a level of some 205 000 tonnes.

This ambitious policy may become even more important if the disadvantages of rapeseed, in the light of recent events, cause a sharp downturn in demand for its oil. If this happens then the climatic requirements which restrict output of soyabeans and sunflowerseed in the EEC may assume less importance as will the comparatively smaller yields per hectare.

In overall production terms recent projections show that rapeseed is unlikely to show as great an increase in output as some other oilseeds. Table XX below compares various oilseed and oilseed meal outputs and Table XXI expresses the annual changes in these outputs.

The quantities given in the Tables are expressed in 44% (protein content) soya-bean meal equivalent in order to make comparisons more realistic.

As Table XX shows production of all oilseeds increased by 4.0% between 1971 and 1973. Most of this increase was contributed by soyabeans. Forecasts for

Table XX
World production and exports of major oilseeds and meals (44 per cent soyabean meal equivalent basis)

| Item | Soyabean | Fish | Peanut | Sunflower | Rapeseed | Other ¹ | Total | USA | Foreign |
|--------------------|----------|------|--------|-----------|----------|--------------------|-------|-------|---------|
| Production: | | | | | | | | | |
| 1971 | 27.78 | 7.44 | 4.55 | 3.19 | 2.75 | 8.09 | 53.80 | 25.24 | 28.56 |
| 1972 | 29.76 | 5.81 | 4.79 | 3.30 | 2.81 | 8.15 | 54.62 | 26.19 | 28.43 |
| 1973 ² | 32.58 | 5.13 | 3.92 | 3.23 | 2.75 | 8.33 | 55.94 | 28.50 | 27.44 |
| 1974 ³ | 40.36 | 6.33 | 4.38 | 3.98 | 2.69 | 8.50 | 66.24 | 34.52 | 31.72 |
| 1975 ⁴ | 40.58 | 7.23 | 4.63 | 4.00 | 2.80 | 9.00 | 68.24 | 34.09 | 34.15 |
| Exports: | | | | | | | | | |
| 1971 | 14.74 | 4.21 | 2.18 | 0.46 | 0.86 | 2.23 | 24.68 | 13.45 | 11.23 |
| 1972 | 15.67 | 3.93 | 2.34 | 0.51 | 0.83 | 2.39 | 25.67 | 13.59 | 12.08 |
| 1973 ² | 18.40 | 2.13 | 2.15 | 0.61 | 0.89 | 2.15 | 26.33 | 15.51 | 10.82 |
| 1974 ³ | 21.42 | 3.37 | 2.14 | 0.64 | 0.75 | 2.18 | 30.50 | 17.39 | 13.11 |
| 1975 ⁴ | 22.94 | 3.93 | 2.33 | 0.62 | 0.80 | 2.33 | 32.95 | 18.27 | 14.68 |

Notes: ¹ Includes cottonseed, linseed, copra, and palm kernel meal.

² Preliminary.

³ Partly forecast.

⁴ Forecast.

Source: *Foreign Agriculture*, 12, (9), March 4 1974, USDA.

Table XXI

Annual changes in world production and exports of major oilseeds and meals (44 per cent soyabean meal equivalent basis)

| Item | Soyabean | Fish | Peanut | Sunflower | Rapeseed | Other ¹ | Total | USA | Foreign |
|--------------------|----------|-------|--------|-----------|----------|--------------------|--------|-------|---------|
| <i>Production:</i> | | | | | | | | | |
| 1960-72 trend | +1.31 | +0.36 | +0.08 | +0.11 | +0.11 | +0.07 | + 2.04 | +1.13 | +0.91 |
| 1972 | +1.98 | -1.63 | +0.24 | +0.11 | +0.06 | +0.06 | + 0.82 | +0.55 | -0.13 |
| 1973 ² | +2.82 | -0.68 | -0.87 | -0.07 | -0.06 | +0.28 | + 1.32 | +2.31 | -0.99 |
| 1974 ³ | +7.78 | +1.20 | +0.46 | +0.75 | -0.06 | +0.17 | +10.30 | +6.02 | +4.28 |
| 1975 ⁴ | +0.22 | +0.90 | +0.25 | +0.02 | +0.11 | +0.50 | + 2.00 | -0.43 | +2.43 |
| <i>Exports:</i> | | | | | | | | | |
| 1960-72 trend | +0.99 | +0.24 | +0.02 | +0.01 | +0.06 | +0.02 | + 1.34 | +0.90 | +0.44 |
| 1972 | +0.93 | -0.28 | +0.16 | +0.05 | -0.03 | +0.16 | + 0.99 | +0.14 | +0.85 |
| 1973 ² | +2.74 | -1.80 | -0.19 | +0.10 | +0.06 | -0.24 | + 0.66 | +1.92 | -1.26 |
| 1974 ³ | +3.02 | +1.24 | -0.01 | +0.03 | -0.14 | +0.03 | + 4.17 | +1.88 | +2.29 |
| 1975 ⁴ | +1.52 | +0.56 | +0.19 | -0.02 | +0.05 | +0.15 | + 2.45 | +0.88 | +1.57 |

Notes: ¹Includes cottonseed, linseed, copra, and palm kernel meal.

Source: *Foreign Agriculture*, 12, (9) March 4 1974, USDA.

²Preliminary.

³Partly forecast.

⁴Forecast.

1974 and 1975 indicate further overall increases, but rapeseed does not share to the same extent as this. Rapeseed production could decline by about 6,000 tonnes in 1974 compared with the previous season, and in 1975 the extent of recovery is likely to be small. At 2.80 million tonnes, production in 1975 will still be just short of the peak of 2.81 million tonnes (soyabean meal equivalent) reached in 1972. Exports have followed much the same pattern as production, fluctuating in recent years to such an extent that no real trend is discernible. This pattern seems likely to continue into 1975. It is therefore clear that the future for rapeseed is dependent on changes in other oilseed outputs, of which the most important is soya. Sunflowerseed is also steadily increasing in importance, because of the demand for its oil, and this could have an adverse affect on rapeseed production prospects. It would appear therefore that any increase in production of rapeseed is likely to take place in basically non-exporting countries such as India. In the 1974/75 season an increase in supply of some 400 000 tonnes of rapeseed (including mustard) is expected in India.

Although Tables XX and XXI compare oilseed and oilseed meal outputs it should be remembered that rapeseed is also a source of vegetable oil. The competition from sunflowerseed has been mentioned, but a greater threat to both rapeseed oil and the vegetable oil market as a whole may be the rapid development of palm oil production in Malaysia and West Africa. With vastly increased quantities of palm oil on the world markets it is expected that other vegetable oils will be displaced to some extent and, in relation to rapeseed oil, this could particularly affect the quantities used in margarine, cooking fats and cooking oils.

QUALITY

The quality of rapeseed products is the greatest single factor which has restricted their use in the past. These shortcomings have been recognised and research is gradually improving the position as far as the oil is concerned with the development of low or zero erucic acid strains of rapeseed. Canada has been the world leader in switching production to these new strains. On December 1st 1973 Canadian industry voluntarily agreed that erucic acid would not constitute more than 5% of the total fatty acids in margarines, shortenings, mayonnaise, salad oils and dressings, and cooking oils. Rapeseed oil with a less than 5% erucic acid content is now referred to as canbra oil in Canada so as to distinguish it from the rapeseed oil previously used. Varieties of low erucic acid rapeseed being cultivated in Canada include both *B. napus* and *B. campestris* varieties. The *B. napus* varieties are Midas, Zephyr and Oro. Those of *B. campestris* are Torch and Span¹. In Europe, research has followed the same lines and it is hoped that, from the 1975/76 season, the new varieties which have been introduced will make rapeseed oil safer for human consumption. However, rapeseed oil also has a valuable outlet in technical uses and one of the problems facing industrial users of the oil is the threat to their supplies if high erucic varieties of rape are no longer grown. It is possible that some zoning system of rapeseed cultivation might be introduced to safeguard this market. Zoning is required to eliminate the possibility of cross pollination between low and high erucic acid varieties of rapeseed.

The rapeseed meal content of animal feeds has always been restricted because of the presence of glucosinolates in the meal. Research has therefore been taking place to eliminate these and the answer has to some extent been found through plant breeding. At the 1974 International Conference on Rapeseed it was stated that the development of low erucic acid and glucosinolate strains of rapeseed would greatly enhance its prospects on the market. It was also stated at the conference that some of these newly developed strains of rapeseed had a 36% protein content with better amino-acid proportions than soyabean meal. Swedish researchers consider that the amino acid composition of rapeseed protein could give the crop possibilities as a source of protein for human nutrition. The strains of rapeseed now being widely introduced are generally referred to as 'double-zero' sinolate content. At the moment the yields from these strains are lower than

those of the ordinary varieties but it is hoped that they will soon be bred up to give matching yields. It is therefore felt that if research programmes progress as well as predicted, by 1980 cultivation of low erucic, low glucosinolate varieties of rapeseed will be well established. It would then appear, that, unless there is a total ban on the presence of erucic acid in rapeseed oil, rapeseed will become most acceptable both as a source of edible oil and of protein. It is therefore of paramount importance that prospective producers of rapeseed ensure that the seed they use meets the likely requirements of major markets.

PROSPECTS

The scope of this report is limited to the UK and EEC markets and therefore the main concern is to indicate the future trends likely in these markets. Over the period covered by the report the UK market experienced a marked increase in demand. In 1973 supplies of rapeseed in the UK reached a record level of 125 000 tonnes. The market for rapeseed oil also expanded, although figures fluctuated from year to year. By 1973 oil supplies amounted to 56 000 tonnes and meal supplies to 140 000 tonnes. With the addition of domestic supplies of rapeseed, which shows every sign of expansion given Common Agricultural Policy incentives, the UK market size is likely to expand for some years to come. At the present time most trade in rapeseed and its products between the UK and other countries is conducted with European and Canadian sources. It is only in the case of rapeseed meal that trade with developing countries has any significance and this trade decreased over the period covered by this report. The share of rapeseed meal imports held by these countries between 1967 and 1972 was 53%. With the entry of the UK to the EEC it is thought that outside suppliers will encounter limited access to the market, especially for the oil products, which face tariff barriers. In the six original member countries of the EEC production of rapeseed has probably reached its peak, although West Germany may still expand its hectarage. At the present time, however, a question mark hangs over the future of rapeseed because of the quality factors which prevent a more extensive use of its products. However, there is confidence that these defects will be overcome in the long-term. The decision to grow rapeseed will then have to be made after consideration of comparative yields, geographical location, climate etc. Given present market conditions most sources felt that soyabean or sunflower might offer new producers better opportunities. Soyabean are easy to place on any market because of the demand for high protein meal. Sunflowerseed could also prove a better proposition than rapeseed because of a growing preference for sunflower oil in some margarine formulations and the general acceptability of its oilcake. However, in those countries where rapeseed is perhaps the only viable oilseed crop, where production is already established and expansion is sought, there seems to be no reason to forestall any such programme, especially if close attention is paid to planting the newer varieties of seed, and a close watch is kept on market trends. Demand for oils and fats and protein will continue to rise and, as a source of both, rapeseed products will continue to be in demand.

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Trade statistics

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Table A1

Rapeseed: Summary of world production

| | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|------|------|------|-------|-------|------|-------|-------|-------|-------|
| Western Europe | | | | | | | | | | |
| Austria | 11 | 12 | 14 | 15 | 12 | 9 | 8 | 7 | 7 | 5 |
| Denmark | 52 | 50 | 33 | 39 | 30 | 21 | 22 | 46 | 50 | 60 |
| France | 247 | 338 | 317 | 433 | 458 | 512 | 567 | 650 | 722 | 661 |
| German Federal Republic | 109 | 107 | 99 | 125 | 170 | 158 | 185 | 228 | 249 | 222 |
| Netherlands | 10 | 12 | 13 | 15 | 18 | 12 | 22 | 33 | 45 | 41 |
| Sweden | 181 | 210 | 95 | 245 | 263 | 208 | 192 | 254 | 327 | 339 |
| Switzerland | 13 | 14 | 11 | 18 | 19 | 14 | 19 | 24 | 24 | 22 |
| United Kingdom | 3 | 3 | 6 | 15 | 13 | 12 | 8 | 10 | 14 | 31 |
| Other:— Belgium and Luxembourg, Finland, Italy, Norway, Turkey | 29 | 28 | 28 | 37 | 39 | 30 | 27 | 21 | 21 | 38 |
| Total Western Europe | 655 | 774 | 610 | 942 | 1 022 | 976 | 1 050 | 1 273 | 1 459 | 1 419 |
| Eastern Europe | | | | | | | | | | |
| Czechoslovakia | 46 | 74 | 78 | 85 | 73 | 48 | 63 | 101 | 107 | 117 |
| German Democratic Republic | 176 | 214 | 211 | 273 | 265 | 165 | 180 | 196 | 234 | 250 |
| Hungary | 8 | 8 | 9 | 8 | 12 | 22 | 46 | 71 | 52 | 75 |
| Poland | 267 | 504 | 448 | 651 | 712 | 204 | 566 | 595 | 430 | 512 |
| Other:— Bulgaria, Rumania, USSR, Yugoslavia | 31 | 29 | 11 | 15 | 11 | 18 | 14 | 26 | 25 | 28 |
| Total Eastern Europe | 528 | 829 | 757 | 1 032 | 1 073 | 457 | 869 | 989 | 848 | 982 |
| America | | | | | | | | | | |
| Canada | 300 | 517 | 585 | 560 | 440 | 758 | 1 637 | 2 155 | 1 300 | 1 207 |
| Chile | 56 | 75 | 77 | 61 | 48 | 64 | 70 | 82 | 78 | 40 |
| Other:— Mexico, United States ^a | 8 | 8 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 |
| Total America | 364 | 600 | 668 | 627 | 494 | 828 | 1 713 | 2 244 | 1 385 | 1 254 |

Table A1 — *continued*

| | '000 tonnes | | | | | |
|---|-------------|-------|-------|-------|-------|-------|
| | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 |
| | 1970 | 1971 | 1972 | 1973 | | |
| Asia | | | | | | |
| People's Republic of China | 1 120 | 1 120 | 1 120 | 1 070 | 940 | 992 |
| India | 903 | 1 466 | 1 276 | 1 228 | 1 568 | 1 347 |
| Japan | 135 | 126 | 95 | 79 | 68 | 48 |
| Korean Republic | 5 | 5 | 12 | 18 | 21 | 31 |
| Pakistan | 302 | 307 | 278 | 307 | 396 | 353 |
| Taiwan | 27 | 23 | 8 | 5 | 4 | 3 |
| Total Asia | 2 492 | 3 047 | 2 789 | 2 757 | 3 127 | 2 722 |
| Africa | | | | | | |
| Algeria and Ethiopia | 5 | 5 | 12 | 12 | 12 | 12 |
| Total Africa | 5 | 5 | 12 | 12 | 12 | 12 |
| World Total | 4 044 | 5 255 | 4 836 | 5 370 | 5 728 | 4 995 |
| | | | | | | |
| Source: FAO <i>Production Yearbook</i> (various issues), FAO Rome | | | | | | |

Table A2
Rape and mustard seed: summary of exports

| | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | '000 tonnes |
|--|-------|-------|-------|-------|-------|-------|-------|---------|---------|---------|---------|-------------|
| Western Europe | | | | | | | | | | | | |
| Austria | 0.2 | 7.4 | 7.5 | 8.6 | 11.2 | 2.9 | 7.7 | 5.2 | 4.2 | 2.2 | 2.9 | |
| Belgium and Luxembourg | 0.4 | 1.2 | 0.6 | 2.1 | 1.8 | 1.9 | 2.9 | 3.5 | 3.3 | 7.6 | 4.1 | |
| Denmark | 51.2 | 56.5 | 45.2 | 41.6 | 30.1 | 18.4 | 20.6 | 28.0 | 43.1 | 37.4 | 59.0 | |
| France | 71.1 | 119.4 | 126.4 | 134.1 | 106.5 | 118.9 | 225.0 | 200.4 | 211.7 | 273.0 | 154.2 | |
| German Federal Republic | 0.6 | 3.3 | 4.8 | 4.0 | 10.2 | 7.8 | 22.8 | 36.9 | 126.8 | 47.6 | 35.0 | |
| Netherlands | 16.2 | 15.6 | 9.9 | 18.0 | 14.4 | 25.6 | 19.8 | 19.5 | 12.3 | 33.2 | 17.5 | |
| Sweden | 30.8 | 48.7 | 73.5 | 17.5 | 21.7 | 57.9 | 102.8 | 53.5 | 59.9 | 104.5 | 161.3 | |
| Other: Italy, Norway, Turkey, United Kingdom | 1.3 | 1.4 | 1.2 | 0.6 | 0.7 | 1.0 | 5.8 | 2.6 | 1.9 | 1.1 | 2.3 | |
| Total Western Europe | 171.8 | 253.5 | 269.1 | 226.5 | 196.6 | 234.4 | 407.4 | 349.6 | 463.2 | 506.6 | 436.3 | |
| Eastern Europe | | | | | | | | | | | | |
| German Democratic Republic | — | — | 0.7 | 20.0 | 16.7 | 57.1 | 24.4 | — | — | — | — | |
| Poland | 5.0 | 0.6 | 60.6 | 88.3 | 106.5 | 175.9 | 85.5 | 44.6 | 52.5 | 4.5 | 53.7 | |
| Other: Bulgaria, Czechoslovakia, Hungary, Roumania, USSR, Yugoslavia | 5.4 | 3.8 | 4.4 | 3.0 | 7.9 | 0.5 | 0.4 | 18.9 | 26.1 | 7.8 | 2.1 | |
| Total Eastern Europe | 10.4 | 4.4 | 65.7 | 111.3 | 131.1 | 233.5 | 110.3 | 63.5 | 78.6 | 12.3 | 55.8 | |
| Asia | | | | | | | | | | | | |
| People's Republic of China | 0.2 | — | 5.8 | 29.9 | 23.3 | 9.2 | 2.1 | 3.0 | 2.0 | 2.0 | 4.0 | |
| Nepal | 3.0 | 2.0 | 0.5 | 6.1 | 5.6 | 5.4 | 4.1 | 2.0 | 3.5 | 4.0 | 4.0 | |
| Other: Burma, India, Pakistan, Taiwan | 0.7 | 0.6 | 0.7 | 0.7 | 1.1 | 94.7 | 88.8 | 89.4 | 66.4 | 0.3 | 0.3 | |
| Total Asia | 3.9 | 2.6 | 7.0 | 35.7 | 30.0 | 109.3 | 95.1 | 94.4 | 71.9 | 6.3 | 8.3 | |
| Africa | | | | | | | | | | | | |
| Ethiopia | 2.2 | 1.4 | 2.0 | 0.5 | 0.5 | 0.8 | 0.7 | 0.6 | 0.5 | 0.9 | 0.8 | |
| Total Africa | 2.2 | 1.4 | 2.0 | 0.5 | 0.5 | 0.8 | 0.7 | 0.6 | 0.5 | 0.9 | 0.8 | |
| America | | | | | | | | | | | | |
| Canada | 161.9 | 106.5 | 275.0 | 362.4 | 399.1 | 388.3 | 367.9 | 705.8 | 1 228.0 | 1 163.4 | 1 265.1 | |
| USA | 0.1 | — | — | — | — | — | — | — | — | — | — | |
| Total America | 162.0 | 106.5 | 275.0 | 362.4 | 399.1 | 388.3 | 367.9 | 705.8 | 1 228.0 | 1 163.4 | 1 265.1 | |
| World Total | 350.3 | 368.4 | 608.8 | 736.4 | 757.3 | 966.3 | 981.4 | 1 213.9 | 1 691.7 | 1 670.9 | 1 702.2 | |

Sources: Where available, officially published export statistics of each country.
 Some figures from *Trade Yearbook FAO* and *World Semi-annual Mielke & Co.*

Table A3
Rape and mustard seed: Summary of imports

| | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| '000 tonnes | | | | | | | | | | | |
| Western Europe | | | | | | | | | | | |
| Austria | 1.1 | 1.1 | 1.3 | 1.4 | 1.3 | 1.4 | 1.8 | 0.5 | 0.2 | 0.3 | 0.2 |
| Belgium and Luxembourg | 1.7 | 4.6 | 7.1 | 4.2 | 8.4 | 6.6 | 7.3 | 3.7 | 7.7 | 9.1 | 7.6 |
| Finland | 0.1 | 3.7 | 3.9 | 7.8 | 4.7 | 10.0 | 6.7 | 6.7 | 6.2 | 8.6 | 6.5 |
| France | 11.2 | 7.6 | 4.5 | 18.1 | 14.3 | 26.0 | 50.7 | 62.3 | 199.4 | 195.3 | 46.1 |
| German Federal Republic | 53.6 | 42.7 | 109.8 | 102.1 | 82.6 | 117.4 | 149.2 | 75.1 | 248.0 | 120.2 | 276.9 |
| Italy | 91.3 | 61.4 | 132.5 | 210.7 | 221.7 | 150.0 | 168.2 | 216.8 | 376.3 | 352.2 | 261.5 |
| Netherlands | 8.1 | 7.2 | 20.5 | 17.7 | 26.7 | 26.1 | 32.1 | 35.7 | 53.1 | 49.3 | 57.9 |
| Norway | 3.7 | 3.3 | 2.6 | 2.8 | 4.2 | 0.3 | 0.2 | 15.0 | 20.0 | 13.0 | 16.2 |
| United Kingdom | 8.1 | 11.7 | 32.7 | 42.9 | 40.7 | 80.6 | 77.8 | 51.3 | 65.1 | 103.6 | 94.6 |
| Other: Denmark, Greece, Portugal, Sweden, Switzerland | 1.8 | 1.6 | 2.5 | 2.7 | 2.4 | 5.0 | 2.8 | 3.0 | 3.4 | 3.6 | 10.1 |
| Total Western Europe | 180.7 | 144.9 | 317.4 | 410.4 | 407.0 | 423.4 | 396.8 | 470.1 | 679.4 | 855.2 | 777.6 |
| Eastern Europe | | | | | | | | | | | |
| Czechoslovakia | 14.0 | 17.3 | 36.6 | 13.9 | 3.5 | 8.0 | 12.0 | 20.0 | 6.2 | 1.0 | — |
| Hungary | — | — | 3.5 | 4.2 | 0.3 | — | 2.7 | 6.6 | — | — | — |
| Poland | 0.1 | 7.4 | 18.1 | 4.0 | 3.4 | 0.5 | 0.4 | — | — | — | — |
| Other: German Democratic Republic, USSR, Yugoslavia | — | 1.3 | 1.8 | 2.5 | 0.9 | 1.2 | 0.7 | 0.9 | 4.6 | 1.3 | 1.3 |
| Total Eastern Europe | 14.1 | 26.0 | 60.0 | 24.6 | 8.1 | 9.7 | 18.3 | 32.1 | 65.6 | 2.3 | 1.3 |
| Asia | | | | | | | | | | | |
| India and Nepal | 3.0 | 4.5 | 4.7 | 3.4 | 5.9 | 5.4 | 4.1 | 2.9 | 58.8 | 25.1 | 71.2 |
| Japan | 94.3 | 82.4 | 108.2 | 217.8 | 222.4 | 257.5 | 284.4 | 344.9 | 416.1 | 613.7 | 693.1 |
| Pakistan | — | 6.6 | 20.4 | 18.0 | 4.3 | 0.6 | 0.6 | 29.2 | 0.2 | 0.4 | — |
| Taiwan | — | 5.6 | — | — | 5.7 | 48.2 | 19.9 | — | — | — | — |
| Other: Ceylon, Israel, Korean Republic | 0.6 | 0.2 | 0.8 | 0.5 | 0.3 | 1.0 | 0.5 | 0.6 | 2.1 | — | 14.0 |
| Total Asia | 97.9 | 99.3 | 134.1 | 239.7 | 238.6 | 312.7 | 299.5 | 377.6 | 477.2 | 639.2 | 778.3 |

Table A3 – *continued*

| | '000 tonnes | | | | | | | | | | |
|---|-------------|-------|-------|-------|-------|-------|-------|---------|---------|---------|---------|
| | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
| Africa | | | | | | | | | | | |
| Algeria | 74.0 | 66.5 | 59.4 | 48.9 | 55.7 | 58.8 | 61.2 | 58.0 | 39.0 | 68.0 | 82.0 |
| Morocco | — | — | — | 5.1 | 16.0 | 12.5 | 18.0 | 16.3 | 11.5 | 15.2 | 15.0 |
| Total Africa | 74.0 | 66.5 | 59.4 | 54.0 | 71.7 | 71.3 | 79.2 | 74.3 | 50.5 | 83.2 | 97.0 |
| America and Oceania | | | | | | | | | | | |
| Mexico | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 12.9 | 0.3 | 0.3 | 28.4 |
| USA | 13.8 | 10.5 | 14.4 | 24.0 | 30.7 | 29.1 | 29.1 | 38.2 | 43.3 | 47.6 | 36.0 |
| Other: Brazil, Colombia, Costa Rica, Guyana, Venezuela, Australia } | 0.5 | 0.4 | 0.6 | 0.5 | 0.4 | 0.6 | 1.0 | 0.5 | 0.5 | 0.6 | 0.7 |
| Total America and Oceania | 14.4 | 11.0 | 15.1 | 24.6 | 31.3 | 29.9 | 30.5 | 54.1 | 44.1 | 48.5 | 65.1 |
| World Total | 381.1 | 347.7 | 586.0 | 753.3 | 756.7 | 847.0 | 824.3 | 1 008.2 | 1 316.8 | 1 628.4 | 1 719.3 |

Sources: Where available, officially published import statistics of each country.

Some figures from *Trade Yearbook FAO* and *Oilworld semi-annual Mielke & Co.*

Table A4
Rape, colza and mustard oils: Summary of exports

| | | | | | | | '000 tonnes | | | | |
|---|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|------------------|------------------|------------------|
| | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
| Western Europe | | | | | | | | | | | |
| France | 7.0 | 11.7 | 32.3 | 43.7 | 35.7 | 29.0 | 21.8 | 39.4 | 60.0 | 103.9 | 111.6 |
| German Federal Republic | 13.8 | 14.3 | 24.5 | 25.9 | 30.8 | 63.2 | 53.1 | 33.0 | 67.8 | 63.7 | 106.3 |
| Netherlands | 1.3 | 0.4 | 1.2 | 2.8 | 2.9 | 6.8 | 7.9 | 7.4 | 16.1 | 22.8 | 33.4 |
| Sweden | 18.8 | 8.9 | 16.4 | 14.0 | 22.1 | 25.3 | 16.9 | 20.0 | 32.3 | 38.3 | 38.3 |
| Other: Belgium, Luxembourg, Denmark, Finland, Italy, Switzerland, United Kingdom } | 0.6 | 0.1 | 0.6 | 0.5 | 3.2 | 3.4 | 1.5 | 3.4 | 2.9 | 5.4 | 11.5 |
| Total Western Europe | 41.5 | 35.4 | 75.0 | 86.9 | 94.7 | 127.7 | 101.2 | 103.2 | 179.1 | 234.1 | 301.1 |
| Eastern Europe | | | | | | | | | | | |
| Hungary | — | 2.0 | — | 5.0 | 2.0 | 1.0 | 5.9 | 8.0 | 8.3 | 8.6 | 8.6 |
| Poland | 4.3 | — | 7.8 | 21.1 | 55.5 | 51.8 | 35.0 | 37.6 | 17.1 | 58.3 | 47.0 |
| Other: Czechoslovakia, German Democratic Republic } | — | — | — | 2.0 | 5.3 | 2.6 | 4.2 | — | 1.0 | 1.0 | 1.0 |
| Total Eastern Europe | 4.3 | 2.0 | 7.8 | 28.1 | 62.8 | 56.4 | 45.1 | 45.6 | 26.4 | 67.9 | 56.6 |
| Asia | | | | | | | | | | | |
| China | — | — | 3.8 | 31.8 | 17.2 | 19.6 | 17.0 | 16.7 | 17.9 | 19.0 | 15.0 |
| Japan | 2.6 | 2.4 | 3.6 | 10.8 | 9.5 | 6.1 | 11.6 | 11.4 | 9.1 | 7.5 | 2.9 |
| Other: Hong Kong, India, Malaysia, Pakistan, Singapore } | 0.2 | 0.2 | 0.5 | 1.7 | 1.5 | 2.1 | 2.6 | 1.8 | 5.7 | 2.1 | 1.6 |
| Total Asia | 2.8 | 2.6 | 7.9 | 44.3 | 28.2 | 27.8 | 31.2 | 29.9 | 31.7 | 28.6 | 19.5 |
| Other countries | 0.1 | 0.2 | — | — | — | — | — | — | 4.0 ^a | 8.0 ^a | 3.5 ^a |
| World Total | 48.7 | 40.2 | 90.7 | 159.3 | 185.7 | 210.9 | 177.5 | 178.7 | 277.2 | 338.6 | 380.7 |

Note (a) Canada only.

Sources: Where available, officially published export statistics of each country.

Some figures from *Trade Yearbook FAO* and *Oil/world semi-annual Mielke & Co.*

Table A5

Rape, colza and mustard oils: Summary of imports

| | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|-------------|-------------|-------------|-------------|-------------|--------------|--------------|-------------|--------------|--------------|--------------|
| Western Europe | | | | | | | | | | | |
| Austria | 3.5 | 5.4 | 8.2 | 12.0 | 8.5 | 12.1 | 11.3 | 8.8 | 12.8 | 21.3 | 17.6 |
| Belgium and Luxembourg | 0.3 | 0.4 | 0.9 | 1.9 | 2.1 | 9.8 | 9.5 | 2.8 | 5.1 | 5.8 | 5.6 |
| France | 4.9 | 1.1 | 1.3 | 2.2 | 1.4 | 6.7 | 3.0 | 4.2 | 11.1 | 6.2 | 7.6 |
| German Federal Republic | 3.4 | 4.7 | 7.7 | 22.3 | 27.5 | 27.2 | 11.4 | 15.0 | 12.6 | 12.9 | 17.9 |
| Italy | 1.0 | 0.2 | 0.6 | 1.4 | 20.4 | 23.7 | 28.6 | 22.1 | 45.3 | 56.7 | 36.0 |
| Netherlands | 6.0 | 4.0 | 11.2 | 14.4 | 9.5 | 30.2 | 23.0 | 6.1 | 9.8 | 10.3 | 9.4 |
| Spain | 0.2 | — | 0.1 | 1.2 | 2.1 | 2.3 | 1.3 | 1.1 | 1.3 | 3.1 | 6.6 |
| Sweden | — | — | — | 0.5 | 3.7 | 2.4 | 3.4 | 1.0 | — | — | 0.4 |
| Switzerland | 1.8 | 1.0 | 1.8 | 3.7 | 3.7 | 3.1 | 2.1 | 1.0 | 2.5 | 3.0 | 2.0 |
| United Kingdom | 3.7 | 0.2 | 0.3 | — | — | 10.9 | 12.1 | 14.7 | 5.9 | 8.7 | 13.1 |
| Other: Denmark, Finland, Norway | 1.2 | 0.3 | 1.2 | 1.0 | 0.3 | 0.9 | 1.5 | 0.2 | 1.0 | 0.1 | — |
| Total Western Europe | 26.0 | 17.3 | 33.3 | 60.6 | 79.2 | 129.3 | 107.2 | 77.0 | 107.4 | 128.1 | 116.2 |
| Eastern Europe | | | | | | | | | | | |
| Czechoslovakia | 1.3 | 2.2 | 3.0 | — | — | — | — | 0.5 | — | — | — |
| German Democratic Republic | — | — | — | — | — | — | — | 1.6 | 3.0 | 6.0 | 6.0 |
| Other: Hungary, Poland, Yugoslavia | 0.3 | 0.4 | 0.1 | 0.5 | — | 0.1 | 0.1 | — | 2.9 | 1.2 | 2.9 |
| Total Eastern Europe | 1.6 | 2.6 | 3.1 | 0.5 | — | 2.2 | 3.0 | 2.1 | 5.9 | 7.2 | 8.9 |
| Asia | | | | | | | | | | | |
| Cyprus | 1.5 | 0.8 | 2.0 | 2.7 | 1.4 | 1.2 | 1.5 | 1.5 | 2.9 | 3.4 | 0.9 |
| Hong Kong | 0.6 | — | 3.7 | 22.8 | 20.8 | 17.7 | 25.9 | 21.6 | 27.8 | 29.1 | 28.9 |
| Malaysia and Singapore | 0.1 | 0.1 | — | 0.2 | 0.4 | 7.3 | 4.4 | 1.4 | 1.1 | 0.8 | 1.3 |
| Ryu Kyu Island | 2.0 | 2.2 | 1.0 | 3.0 | 2.7 | 2.9 | 3.2 | 4.3 | — | — | — |
| Other: India, Pakistan, Arabian Countries | 0.2 | 0.3 | 0.5 | 4.8 | 3.9 | 1.4 | 1.6 | 0.7 | 1.0 | 0.6 | 13.0 |
| Total Asia | 4.4 | 3.4 | 7.2 | 33.5 | 29.2 | 30.5 | 36.6 | 29.5 | 32.8 | 33.9 | 44.1 |

Table A 5 – continued

| | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| '000 tonnes | | | | | | | | | | | |
| Africa | | | | | | | | | | | |
| Algeria | 8.0 | 6.8 | 13.7 | 26.9 | 9.0 | 12.0 | 2.0 | 6.0 | 41.0 | 29.0 | 47.0 |
| Morocco | — | — | — | 10.8 | — | — | 0.2 | 1.3 | 11.3 | 24.3 | 28.7 |
| Reunion | — | 0.1 | 0.7 | 1.8 | 2.7 | 2.3 | 3.6 | 1.7 | 2.6 | 3.0 | 4.3 |
| Other: A.R. Egypt, Ethiopia, Kenya, Madagascar, Mauritius, Rwanda, East and South Africa } | 0.1 | — | — | — | — | 3.3 | 0.4 | 2.5 | 0.2 | 0.2 | 0.2 |
| Total Africa | 8.1 | 6.9 | 14.4 | 39.5 | 11.7 | 17.6 | 6.2 | 11.5 | 55.1 | 56.5 | 70.2 |
| America | | | | | | | | | | | |
| Chile | — | — | — | 0.6 | 1.7 | 1.6 | 2.3 | — | 13.6 | 22.3 | 6.9 |
| Guadeloupe and Martinique | — | 0.8 | 3.9 | 5.2 | 3.2 | 3.2 | 4.7 | 1.6 | 1.3 | 1.6 | 4.5 |
| United States | 1.4 | 2.1 | 2.3 | 3.9 | 3.9 | 4.4 | 4.5 | 3.6 | 5.1 | 4.7 | 5.7 |
| Other: Argentina, Brazil, French Guiana, Colombia, Guyana, Trinidad and Tobago } | — | — | 0.1 | 0.2 | 0.2 | 0.1 | 0.5 | 2.0 | 0.2 | 0.3 | 0.3 |
| Total America | 1.4 | 2.9 | 6.4 | 9.9 | 9.0 | 9.3 | 12.0 | 7.2 | 20.2 | 28.9 | 17.4 |
| Oceania | | | | | | | | | | | |
| Australia | 0.4 | 2.0 | 4.0 | 5.8 | 5.0 | 5.1 | — | 6.8 | 5.6 | 2.1 | 0.3 |
| Fiji and New Zealand | 0.2 | 0.1 | 0.2 | 0.3 | 0.2 | 0.3 | 0.1 | 0.2 | 0.4 | 0.3 | 0.4 |
| Total Oceania | 0.6 | 2.1 | 4.2 | 6.1 | 5.2 | 5.4 | 6.9 | 5.8 | 2.5 | 0.6 | 0.7 |
| World Total | 42.1 | 35.2 | 68.6 | 150.1 | 134.3 | 194.3 | 171.9 | 133.1 | 223.9 | 255.2 | 257.5 |

... not available.

Sources: Where available, officially published import statistics of each country.
 Some figures from *Trade yearbook FAO* and *Oilworld semi-annual Mielke & Co.*

Table A6

Rapeseed cake and meal: Summary of exports and imports

| | EXPORTS | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------|
| Western Europe | | | | | | | | | | | | |
| Denmark | — | — | — | — | 1.7 | 1.4 | 5.1 | 5.6 | 1.7 | 0.4 | 2.2 | 1.1 |
| France | 5.1 | 9.6 | 30.8 | 59.2 | 40.2 | 78.0 | 99.9 | 65.2 | 142.6 | 133.3 | 71.9 | ... |
| German Federal Republic | 36.3 | 23.2 | 37.8 | 39.8 | 37.8 | 50.1 | 66.0 | 40.5 | 58.1 | 63.4 | 119.3 | ... |
| Italy | 31.9 | 25.3 | 52.3 | 67.7 | 82.8 | 30.8 | 33.0 | 68.8 | 75.4 | 88.2 | 39.9 | ... |
| Other: Austria, Belgium and Luxembourg, Netherlands | 3.4 | 0.7 | 0.4 | 3.1 | 2.1 | 0.8 | 0.9 | 3.5 | 7.0 | 4.0 | 15.1 | ... |
| Total Western Europe | 76.7 | 58.8 | 121.3 | 171.5 | 164.3 | 164.8 | 205.4 | 179.7 | 283.5 | 291.1 | 247.3 | ... |
| Asia | | | | | | | | | | | | |
| Pakistan | 20.5 | 16.0 | 17.0 | 15.3 | 11.8 | 16.1 | 8.5 | 29.0 | 22.1 | 5.1 | 42.7 | ... |
| Total Asia | 20.5 | 16.0 | 17.0 | 15.3 | 11.8 | 16.1 | 8.5 | 29.0 | 22.1 | 5.1 | 42.7 | ... |
| Africa | | | | | | | | | | | | |
| Algeria | 29.5 | 30.3 | 28.5 | 22.3 | 28.2 | 26.9 | 34.1 | 30.0 | 20.0 | 32.0 | 32.0 | 32.0 |
| Ethiopia | 7.6 | 4.6 | 4.6 | 4.3 | 4.4 | 4.0 | 4.9 | 2.1 | 1.6 | 7.2 | 6.0 | 6.0 |
| Morocco | 0.2 | 0.3 | 0.7 | 2.6 | 8.8 | 4.8 | 12.2 | 5.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Total Africa | 37.3 | 35.2 | 33.8 | 29.2 | 41.4 | 35.7 | 51.2 | 37.1 | 28.6 | 46.2 | 45.0 | 45.0 |
| America | | | | | | | | | | | | |
| Argentina | 2.9 | 3.7 | 3.2 | 1.2 | — | — | 0.5 | 1.0 | 1.7 | ... | ... | ... |
| Chile | 12.7 | 20.5 | 16.4 | 44.9 | 30.0 | 8.8 | 12.2 | 15.0 | 10.0 | 13.0 | ... | ... |
| Total America | 15.6 | 24.2 | 19.6 | 46.1 | 30.0 | 8.8 | 12.7 | 16.0 | 12.7 | 13.0 | ... | ... |
| World Total | 150.1 | 134.2 | 191.7 | 262.1 | 247.5 | 225.4 | 277.8 | 258.4 | 356.7 | 410.3 | 377.7 | |

Table A6 — *continued*

| | | '000 tonnes | | | | | | | | | | |
|-------------------------|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
| of which into:— | | | | | | | | | | | | |
| Western Europe | | | | | | | | | | | | |
| Austria | | 0.7 | 2.7 | 5.1 | 8.1 | 6.3 | 5.4 | 5.8 | 8.0 | 10.4 | 12.0 | 12.0 |
| Belgium and Luxembourg | | 17.1 | 17.4 | 24.9 | 36.6 | 30.7 | 39.0 | 43.4 | 35.1 | 63.8 | 69.4 | 67.7 |
| Denmark | | 12.8 | 14.1 | 10.1 | 9.6 | 11.6 | 10.6 | 11.1 | 16.9 | 30.5 | 38.8 | 33.0 |
| France | | 16.9 | 5.2 | 5.6 | 2.7 | 4.9 | 2.0 | 0.2 | 5.7 | 8.3 | 10.3 | 22.4 |
| German Federal Republic | | 27.7 | 41.3 | 43.3 | 49.6 | 53.6 | 26.5 | 28.5 | 65.8 | 67.9 | 67.5 | 55.8 |
| Italy | | — | — | — | — | — | 1.8 | — | 0.4 | 0.3 | — | — |
| Netherlands | | 33.8 | 21.9 | 26.4 | 46.4 | 26.8 | 40.2 | 59.7 | 36.7 | 67.0 | 111.0 | 77.4 |
| Norway | | 14.7 | 7.0 | 21.7 | 21.0 | 41.0 | 47.1 | 47.2 | 36.0 | 31.3 | 11.7 | 22.3 |
| Portugal | | — | — | — | 2.7 | — | — | — | 0.8 | 0.7 | ... | ... |
| Spain | | — | — | — | — | — | — | 2.5 | — | 0.4 | ... | ... |
| Sweden | | 0.6 | 0.4 | — | 12.1 | 5.2 | 0.1 | — | — | 1.8 | — | 1.5 |
| United Kingdom | | 29.8 | 36.3 | 55.4 | 87.2 | 76.7 | 86.3 | 100.0 | 63.4 | 96.3 | 96.0 | 91.1 |
| Total Western Europe | | 154.1 | 146.3 | 192.6 | 273.3 | 256.8 | 257.2 | 298.4 | 267.8 | 378.7 | 416.7 | 383.2 |
| Other countries | | — | 1.0 | 2.5 | 2.8 | 1.8 | 1.2 | 0.1 | — | 13.1 | 6.5 | 10.9 |
| World Total | | 154.1 | 147.3 | 195.1 | 276.1 | 258.6 | 258.4 | 298.5 | 267.8 | 391.8 | 423.2 | 394.1 |

Sources: Where available, officially published export and import statistics of each country.
Some figures from *Trade yearbook FAO* and *Oilworld semi-annual Mielke & Co.*

Table A7
Rape seed: Imports into the United Kingdom

| | | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | |
|----------------------------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|----|
| Totals | tonnes | 4 698 | 7 286 | 8 074 | 11 656 | 32 662 | 42 813 | 40 672 | 80 554 | 77 824 | 49 885 | 65 018 | 103 160 | |
| | £'000 | 229 | 317 | 345 | 554 | 1 492 | 2 024 | 1 770 | 3 354 | 3 380 | 2 996 | 3 872 | 5 183 | |
| of which from:— | | | | | | | | | | | | | | |
| Denmark | tonnes | 523 | — | 3 018 | 1 255 | 6 463 | 4 149 | 599 | 859 | 1 616 | 3 433 | 7 356 | 3 963 | |
| | £'000 | 23 | — | 138 | 55 | 275 | 197 | 25 | 39 | 69 | 202 | 419 | 206 | |
| France | tonnes | — | 1 186 | — | 3 070 | 5 820 | 11 037 | 1 667 | — | 2 696 | 822 | 1 287 | 1 141 | |
| | £'000 | — | 46 | — | 149 | 284 | 523 | 79 | — | 104 | 56 | 54 | 60 | |
| German Federal Republic | tonnes | — | 993 | 1 658 | 486 | — | 2 730 | 1 849 | 2 283 | 9 212 | 976 | — | 4 678 | |
| | £'000 | — | 34 | 56 | 21 | — | 129 | 89 | 137 | 363 | 57 | — | 24 | |
| Netherlands | tonnes | 1 246 | 1 237 | 1 174 | 2 140 | 895 | 1 958 | 3 837 | 3 323 | 4 232 | 15 787 | 21 861 | 27 527 | |
| | £'000 | 68 | 71 | 62 | 104 | 53 | 105 | 192 | 162 | 213 | 983 | 1 380 | 1 440 | |
| Sweden | tonnes | — | — | 563 | 2 621 | — | 745 | 1 984 | — | 27 771 | 9 430 | 19 824 | 55 578 | |
| | £'000 | — | — | 25 | 125 | — | 41 | 87 | — | 1 162 | 569 | 1 168 | 2 954 | |
| Czechoslovakia | tonnes | — | — | — | — | — | — | 557 | — | — | — | — | — | |
| | £'000 | — | — | — | — | — | — | 25 | — | — | — | — | — | |
| German Democratic Republic | tonnes | — | — | — | — | 660 | 9 821 | 5 202 | 42 485 | 12 801 | — | — | — | |
| | £'000 | — | — | — | — | 27 | 457 | 234 | 1 783 | 542 | — | — | — | |
| Poland | tonnes | — | — | — | — | 11 486 | 8 677 | 19 302 | 31 604 | 13 918 | 13 635 | 5 581 | 357 | |
| | £'000 | — | — | — | — | — | 470 | 410 | 780 | 1 233 | 637 | 796 | 318 | 19 |
| Canada | tonnes | 2 929 | 3 827 | 1 651 | 2 083 | 7 340 | 3 672 | 5 666 | — | 5 578 | 5 740 | 8 946 | 9 911 | |
| | £'000 | 138 | 163 | 64 | 99 | 383 | 160 | 257 | — | 290 | 328 | 526 | 480 | |
| Australia | tonnes | — | — | — | — | — | — | — | — | — | 39 | 162 | — | |
| | £'000 | — | — | — | — | — | — | — | — | — | 4 | 6 | — | |
| Other Countries | tonnes | — | 43 | 10 | 1 | 16 | 24 | 9 | — | — | 23 | 1 | 5 | |
| | £'000 | — | 3 | — | 1 | — | 2 | 2 | — | — | 1 | 1 | — | |

— Nil or negligible

Source: *The trade of the United Kingdom HM Customs & Excise*

Table A8

A comparison of Oilseed Import Prices 1965–1973

| | Rapeseed ¹ | | Soya bean ² | |
|------|-----------------------|-------------|------------------------|-------------|
| 1965 | 44.1 | £ per tonne | 41.6 | £ per tonne |
| 1966 | 46.5 | " | 45.3 | " |
| 1967 | 44.8 | " | 41.0 | " |
| 1968 | 43.9 | " | 46.8 | " |
| 1969 | 45.8 | " | 44.7 | " |
| 1970 | 57.0 | " | 49.7 | " |
| 1971 | 57.9 | " | 53.4 | " |
| 1972 | 59.2 | " | 57.4 | " |
| 1973 | 102.8 | " | 90.9 | " |

Notes: (1) Canadian, nearest forward shipment, c.i.f. European ports; 1964–1969, 40%; 1970 & 1971, 42%; 1972 & 1973, 40%.

(2) American No 2, yellow, bulk, nearest forward shipment, c.i.f. UK.

Source: FAO Monthly Bulletin, various issues, Rome.

Table A9

Rapeseed oil: Imports into the United Kingdom

| | | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 |
|----------------------------|--------|-------|------|------|------|------|--------|--------|--------|-------|-------|
| Totals | tonnes | 3 739 | 181 | 279 | 38 | 20 | 10 863 | 12 084 | 14 701 | 5 887 | 9 147 |
| | £'000 | 283 | 23 | 33 | 5 | 4 | 717 | 918 | 1 767 | 802 | 863 |
| of which from:— | tonnes | — | — | — | 16 | — | — | — | 159 | — | — |
| Belgium | £'000 | — | — | — | 3 | — | — | — | 20 | — | — |
| France | tonnes | — | — | — | — | — | 3 054 | — | — | 400 | 2 |
| | £'000 | — | — | — | — | — | 198 | — | — | 53 | — |
| German Federal Republic | tonnes | 1 700 | 102 | 9 | 3 | — | — | — | — | — | — |
| | £'000 | 130 | — | — | — | — | — | — | — | — | — |
| Netherlands | tonnes | — | 203 | 1 | — | — | 1 903 | 2 235 | 300 | 2 350 | 2 350 |
| | £'000 | — | 21 | — | — | — | 144 | 273 | 40 | 216 | — |
| Sweden | tonnes | 1 959 | — | — | — | — | 1 505 | 761 | 841 | 775 | — |
| | £'000 | 136 | — | — | — | — | 95 | 59 | 85 | 101 | — |
| German Democratic Republic | tonnes | — | — | — | — | — | 1 018 | 1 388 | — | — | — |
| | £'000 | — | — | — | — | — | 66 | 107 | — | — | — |
| Poland | tonnes | — | — | — | — | — | 4 947 | 6 873 | 5 310 | 788 | 1 459 |
| | £'000 | — | — | — | — | — | 331 | 502 | 639 | 91 | 92 |
| India | tonnes | 69 | 40 | 17 | — | — | — | — | — | — | — |
| | £'000 | 15 | 9 | 4 | — | — | — | — | — | — | — |
| Canada | tonnes | — | — | — | — | — | 820 | 6 095 | 3 396 | 5 277 | — |
| | £'000 | — | — | — | — | — | — | — | — | — | — |
| Other Countries | tonnes | 11 | 39 | 59 | 19 | 20 | 339 | 339 | 61 | 228 | 59 |
| | £'000 | 2 | 5 | 8 | 2 | 4 | 27 | 31 | 10 | 36 | 11 |

Information not shown before 1963 — Nil or negligible

Source: *The trade of the United Kingdom HM Customs & Excise*

Table A10

Rapeseed oil: Quarterly Average Prices and Annual Range/Spot prices—Hull areas

| | | | | | | (£ per tonne) |
|---------------------------|------|-----|-----|-----|--------------|---------------|
| | I | II | III | IV | Annual range | |
| | | | | | Low | High |
| Refined deodorised | 1969 | 110 | 106 | 107 | 149 | 104 169 |
| | 1970 | 169 | 170 | 166 | 171 | 162 174 |
| | 1971 | 180 | 168 | 185 | 169 | 160 191 |
| | 1972 | 137 | 139 | 135 | 127 | 118 142 |
| | 1973 | 153 | 198 | 253 | 269 | 136 277 |
| Technical refined | 1969 | 108 | 103 | 106 | 148 | 102 148 |
| | 1970 | 159 | 171 | 167 | 169 | 157 172 |
| | 1971 | 174 | 169 | 173 | 162 | 162 174 |
| | 1972 | 133 | 137 | 140 | 138 | 129 141 |
| | 1973 | 158 | 199 | 265 | — | 141 279 |
| Crude | 1969 | 93 | 89 | 91 | 133 | 88 133 |
| | 1970 | 144 | 156 | 153 | 153 | 143 157 |
| | 1971 | 157 | 149 | 153 | 143 | 143 157 |
| | 1972 | 128 | 136 | 118 | 118 | 118 146 |

Note: Information not shown in 1973

Source: *Public Ledger*

Table A11

Rapeseed cake and meal: Imports into the United Kingdom

| | | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 |
|-------------------------|--------------|---------------|-----------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Totals | tonnes £'000 | 40 187 706 | 49 777 1 174 | 29 847 741 | 36 266 937 | 55 373 1 474 | 87 193 2 120 | 76 683 1 994 | 86 348 2 463 | 99 978 2 745 | 63 402 2 072 | 96 264 2 939 | 95 650 2 853 |
| of which from:— | | | | | | | | | | | | | |
| France | tonnes £'000 | — | — | — | 640 | 5 731 | 5 576 | 2 908 | 16 514 | 21 718 | 5 382 | 24 275 | 9 784 |
| German Federal Republic | tonnes £'000 | 3 301 | 7 263 | 4 176 | 2 777 | 406 | 137 | 79 | 471 | 601 | 191 | 726 | 8 314 |
| Italy | tonnes £'000 | 60 | 192 | 102 | 80 | 12 | 12 061 | 13 310 | 19 791 | 6 567 | 9 307 | 8 394 | 254 |
| Netherlands | tonnes £'000 | 3 585 | 14 422 | — | — | 6 584 | 18 416 | 10 530 | 7 865 | 3 937 | 6 555 | 4 755 | 16 584 |
| Poland | tonnes £'000 | — | — | — | — | 171 | 446 | 276 | 204 | 118 | 216 | 149 | 463 |
| Rumania | tonnes £'000 | — | — | 11 | — | — | 1 441 | 1 163 | — | — | — | — | 245 |
| Pakistan | tonnes £'000 | — | — | — | — | 36 | 31 | — | — | — | — | — | 11 |
| Taiwan | tonnes £'000 | — | — | — | — | — | — | 7 164 | — | 1 988 | — | 1 092 | 1 030 |
| Algeria | tonnes £'000 | 23 342 | 19 913 | 15 920 | 16 828 | 25 050 | 22 545 | 17 674 | 22 346 | 8 342 | 28 419 | 22 146 | 19 906 |
| Morocco | tonnes £'000 | 405 | 475 | 398 | 440 | 660 | 544 | 464 | 639 | 395 | 227 | 906 | 737 |
| Argentina | tonnes £'000 | — | — | — | — | — | — | — | — | — | — | — | — |
| Canada | tonnes £'000 | — | — | — | — | — | — | — | — | — | — | — | — |
| Chile | tonnes £'000 | 5 416 | 5 363 | 5 658 | 9 001 | 8 922 | 24 689 | 8 713 | 2 736 | 7 377 | 500 | — | — |
| Other Countries | tonnes £'000 | 101 | 114 | 140 | 231 | 233 | 585 | 217 | 74 | 210 | 15 | — | — |

— Nil or negligible

Source: *The trade of the United Kingdom HM Customs & Excise*

Table A12
Rape and Colza seed: Imports into France

| | 1961 ^a | 1962 ^a | 1963 ^a | 1964 ^a | 1965 ^a | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|---|-----------------------------------|-------------------|-------------------|-------------------|-------------------|--------------|--------------|--------------|---------------|-----------------|-----------------|
| Total | tonnes £'000 | 33 840 1 771 | 15 669 740 | 11 175 579 | 7 610 389 | 4 495 244 | 8 134 368 | 4 915 229 | 17 964 677 | 37 932 1 569 | 51 238 2 827 |
| of which from:— | | | | | | | | | | | |
| Belgium/Luxembourg | tonnes £'000 | — | — | — | — | — | — | — | 47 | 53 | — |
| Denmark | tonnes £'000 | — | — | — | — | — | — | — | 5 | 7 | 64 |
| German Federal Republic | tonnes £'000 | — | — | 297 | — | — | — | — | 187 | 714 | 7 |
| Netherlands | tonnes £'000 | — | 45 | 144 | 89 | 92 | — | — | 12 | 46 | 5 723 |
| Sweden | tonnes £'000 | — | 7 | 22 | 14 | 14 | — | — | 76 | — | 293 |
| United Kingdom | tonnes £'000 | 3 357 | 362 | 2 365 | 452 | 951 | 283 | 331 | 12 | — | — |
| German Democratic Republic | tonnes £'000 | 173 | 20 | 120 | 24 | 53 | 17 | 20 | 381 | 362 | 580 |
| Hungary | tonnes £'000 | 1 854 | 5 159 | 6 415 | 3 526 | — | — | — | 1 951 | 25 | — |
| Poland | tonnes £'000 | 101 | 253 | 326 | 180 | — | — | — | 1 951 | 31 | — |
| Burundi | tonnes £'000 | — | — | — | — | — | — | — | — | 6 848 | 189 |
| Ethiopia | tonnes £'000 | — | — | — | — | — | — | — | — | 2 679 | 45 |
| Canada | tonnes £'000 | 299 | 307 | 249 | — | — | — | — | — | — | 3 590 |
| United States | tonnes £'000 | 16 | 16 | 13 | — | 109 | — | — | — | — | — |
| Other Countries | tonnes £'000 | 25 223 | 9 061 | 123 | 510 | 1 155 | 6 | 7 823 | 4 557 | 3 619 | 4 439 |
| — Nil or negligible | (a) Including mustard and navette | | | | | | | | | | |
| Source: Commerce Extérieur Direction Générale des Douanes et Droits Indirects | | | | | | | | | | | |

— Nil or negligible (a) Including mustard and navette

Source: Commerce Extérieur Direction Générale des Douanes et Droits Indirects

Table A13

Rapeseed: Imports into the German Federal Republic

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | |
|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|------------------|------------------|-----------------|-------------------|
| Totals | tonnes £'000 | 24 891 1 146 | 31 198 1 161 | 45 339 1 666 | 32 190 1 441 | 100 943 4 630 | 91 204 3 880 | 68 369 3 002 | 108 019 5 206 | 136 379 7 635 | 60 767 3 401 | 235 321 13 824 |
| of which from:— | | | | | | | | | | | | |
| Belgium/Luxembourg | tonnes £'000 | — | — | — | — | — | — | — | — | — | — | — |
| Denmark | tonnes £'000 | 2 663 115 | 12 811 446 | 15 172 588 | 15 910 692 | 24 064 1 024 | 22 005 1 004 | 14 275 550 | 5 816 240 | 1 000 53 | 3 961 208 | 10 625 581 |
| France | tonnes £'000 | — | 500 | — | 3 337 | 10 166 | 12 553 | 16 892 6 526 | 46 350 496 | 40 | — | 9 659 871 |
| Netherlands | tonnes £'000 | — | 18 | — | 166 | 492 | 589 | 903 | 3 803 | 7 | — | — |
| Sweden | tonnes £'000 | 1 454 76 | 1 023 54 | 1 179 58 | 6 125 274 | 1 255 78 | 5 417 257 | 3 182 207 | 2 986 1 039 | 3 372 244 | 6 042 250 | 521 |
| Bulgaria | tonnes £'000 | — | — | 7 046 279 | 4 892 218 | 29 008 1 289 | 3 067 128 | 9 460 364 | 41 685 1 621 | 56 362 2 306 | 13 768 743 | 15 725 865 |
| Poland | tonnes £'000 | — | 78 | 180 | 330 | 43 | — | — | — | — | — | — |
| Yugoslavia | tonnes £'000 | — | 3 | 8 | 15 | 2 | — | — | — | — | — | — |
| Canada | tonnes £'000 | — | 4 074 134 | 6 415 209 | — | 1 047 46 | — | 20 214 777 | 39 539 1 665 | 18 971 741 | 744 41 | 3 122 169 |
| USA | tonnes £'000 | 20 774 955 | 12 690 506 | 14 826 505 | 1 539 70 | 33 830 1 618 | 48 158 1 496 | 4 344 — | 1 281 201 | 10 649 60 | 38 289 484 | 175 284 2 106 |
| Other Countries | tonnes £'000 | — | — | — | — | — | — | — | — | — | 5 | — |

— Nil or negligible

Source: *Der Aussenhandel/ Statistisches Bundesamt*

Table A14
Rape and Colza seed: Imports into Italy

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|----------------------------|--------|---------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| Totals | 64 852 | 105 664 | 89 656 | 61 380 | 132 281 | 210 453 | 221 509 | 149 815 | 168 233 | 216 800 | 376 261 |
| tonnes £'000 | 2 778 | 4 267 | 3 633 | 3 033 | 5 834 | 9 141 | 9 762 | 6 499 | 7 496 | 12 181 | 22 045 |
| of which from:- | | | | | | | | | | | |
| Austria | 3 646 | - | 148 | - | 8 297 | 11 220 | 9 418 | 5 325 | 5 985 | 28 | - |
| tonnes £'000 | 166 | - | 7 | - | 357 | 494 | 406 | 241 | 214 | 2 | - |
| Denmark | 5 129 | 21 | 11 924 | 5 742 | 7 709 | 3 568 | 4 701 | 505 | 1 751 | 413 | 143 |
| tonnes £'000 | 223 | 1 | 520 | 262 | 325 | 163 | 210 | 28 | 77 | 19 | 9 |
| Finland | - | 700 | - | - | - | 600 | - | - | - | - | - |
| tonnes £'000 | - | 28 | - | - | - | 27 | - | - | - | - | - |
| France | - | 19 738 | 20 119 | 32 956 | 29 663 | 50 609 | 35 279 | 58 727 | 118 136 | 164 573 | 179 449 |
| tonnes £'000 | - | 815 | 790 | 1 708 | 1 432 | 2 357 | 1 632 | 2 519 | 5 356 | 9 483 | 10 713 |
| German Federal Republic | 3 190 | - | - | 2 | 1 015 | 2 054 | 4 336 | 20 | 3 368 | 8 786 | 68 660 |
| tonnes £'000 | 134 | - | - | - | 43 | 94 | 195 | 2 | 184 | 571 | 4 394 |
| Netherlands | 20 | 110 | 5 284 | 50 | 44 | 56 | 99 | 57 | 2 510 | 84 | 209 |
| tonnes £'000 | 1 | 6 | 241 | 3 | 3 | 4 | 6 | 4 | 105 | 7 | 15 |
| Norway | - | - | - | - | 525 | - | - | - | - | - | - |
| tonnes £'000 | - | - | - | - | 24 | - | - | - | - | - | - |
| Sweden | 3 011 | 4 176 | 15 037 | 15 769 | 34 373 | 29 021 | 1 698 | 4 212 | 4 | 25 | 8 |
| tonnes £'000 | 143 | 239 | 690 | 784 | 1 563 | 1 264 | 69 | 198 | 1 | 3 | 2 |
| Bulgaria | - | 3 777 | 794 | - | 1 270 | 966 | 1 141 | 337 | 278 | 292 | 229 |
| tonnes £'000 | - | 130 | 35 | - | 54 | 35 | 37 | 11 | 10 | 11 | 9 |
| German Democratic Republic | - | - | - | - | - | 6 620 | 8 011 | - | - | - | - |
| tonnes £'000 | - | - | - | - | - | 302 | 362 | - | - | - | - |
| Hungary | 172 | 2 739 | - | - | - | - | 15 | - | - | 7 198 | - |
| tonnes £'000 | 6 | 114 | - | - | - | - | 322 | - | - | 421 | - |
| Poland | 1 000 | 5 809 | - | 16 575 | 37 724 | 62 016 | 70 123 | 30 332 | - | - | - |
| tonnes £'000 | 38 | 243 | - | 685 | 1 632 | 2 775 | 3 079 | 1 350 | - | - | - |
| Rumania | - | 548 | - | 2 145 | 1 818 | 4 300 | - | 784 | 709 | 1 670 | 81 |
| tonnes £'000 | - | 15 | - | 55 | 46 | 135 | - | 31 | 29 | 100 | - |
| USSR | - | 197 | 2 | - | - | 670 | - | - | - | - | - |
| tonnes £'000 | - | 10 | - | - | - | 32 | - | - | - | - | - |
| Yugoslavia | - | - | 34 | - | - | 28 | 99 | - | 5 | 6 704 | 8 206 |
| tonnes £'000 | - | - | 1 | - | - | 1 | - | - | - | 365 | 444 |
| People's Republic of China | 485 | - | - | - | - | - | - | - | - | - | - |
| tonnes £'000 | 19 | - | - | - | - | - | - | - | - | 159 | - |

TABLE A14—*continued*

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-----------------|--------|--------|--------|-------|--------|--------|--------|-------|-------|--------|---------|
| Oman | — | — | — | — | 796 | — | — | — | — | — | — |
| tonnes | — | — | — | — | 35 | — | — | — | — | — | — |
| £'000 | — | — | — | — | — | — | — | — | — | — | — |
| Thailand | — | — | — | — | — | — | 35 | — | — | — | — |
| tonnes | — | — | — | — | — | — | 1 | — | — | — | — |
| £'000 | — | — | — | — | — | — | — | — | — | — | — |
| Ethiopia | 324 | 104 | 121 | 138 | 78 | 186 | 280 | 64 | — | — | — |
| tonnes | 15 | 4 | 5 | 6 | 4 | 9 | 12 | 3 | — | — | — |
| £'000 | — | — | — | — | 465 | 129 | — | — | — | — | — |
| Sudan | — | — | — | — | 32 | 10 | — | — | — | — | — |
| tonnes | — | — | — | — | 208 | — | — | — | — | — | — |
| £'000 | — | — | — | — | — | — | — | — | — | — | — |
| Tunisia | — | — | — | — | 9 | — | — | — | — | — | — |
| tonnes | 49 522 | 74 393 | 25 937 | 5 670 | 29 083 | 65 161 | 82 273 | 8 445 | 5 084 | 27 885 | 115 687 |
| £'000 | 2 092 | 2 995 | 931 | 217 | 1 212 | 2 675 | 3 567 | 328 | 168 | 1 265 | 6 279 |
| Canada | — | — | — | — | — | — | — | — | — | — | — |
| Panama | — | — | — | — | — | — | — | — | — | — | — |
| tonnes | — | — | — | — | — | — | — | — | — | — | — |
| £'000 | — | — | — | — | — | — | — | — | — | — | — |
| USA | — | — | 150 | 441 | 1 051 | — | — | — | — | — | — |
| tonnes | — | — | 5 | 10 | 53 | — | — | — | — | — | — |
| £'000 | — | — | — | 73 | — | 1 | 693 | 747 | 1 | 3 | — |
| Other Countries | 10 | — | 3 | — | — | — | 28 | 35 | — | — | — |
| tonnes | 4 | — | — | — | — | — | — | — | — | — | — |
| £'000 | — | — | — | — | — | — | — | — | — | — | — |

— Nil or negligible

Source: *Comercio con l'estero* Istituto Centrale di Statistica

Table A15
Rapeseed: Imports into the Netherlands

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|----------------------------|-------|--------|-------|-------|--------|-------|--------|--------|--------|--------|--------|
| Totals | 2 644 | 13 284 | 4 715 | 3 207 | 16 200 | 7 940 | 18 805 | 18 986 | 20 137 | 24 502 | 53 079 |
| of which from:— | 123 | 502 | 170 | 144 | 647 | 313 | 790 | 767 | 1 184 | 1 486 | 2 965 |
| Belgium/Luxembourg | 94 | 44 | 35 | 12 | 23 | 2 | 48 | 43 | 28 | 103 | 450 |
| tonnes £'000 | 5 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 2 | 8 | 36 |
| Denmark | 1 080 | 7 040 | 1 228 | 1 090 | 812 | 697 | 2 041 | 3 349 | 3 879 | 4 715 | — |
| tonnes £'000 | 48 | 250 | 44 | 45 | 34 | 28 | 85 | 141 | 194 | 260 | — |
| France | — | — | — | — | 7 805 | — | 1 951 | — | 5 535 | 238 | — |
| tonnes £'000 | — | — | — | — | 290 | — | 109 | — | 459 | 21 | — |
| German Federal Republic | — | — | — | — | 21 | 2 360 | — | 10 631 | 7 296 | 4 076 | 5 619 |
| tonnes £'000 | — | — | — | — | 1 | 104 | — | 411 | 268 | 246 | 965 |
| Sweden | — | — | — | — | — | — | — | 54 | — | 100 | 289 |
| tonnes £'000 | — | — | — | — | — | — | — | 2 | — | 4 | 88 |
| German Democratic Republic | — | — | — | — | — | — | — | — | 2 266 | 2 370 | 682 |
| tonnes £'000 | — | — | — | — | — | — | — | — | 86 | 91 | — |
| Poland | — | — | — | — | — | 2 097 | — | 250 | 3 228 | 475 | — |
| tonnes £'000 | — | — | — | — | — | 80 | — | 10 | 132 | 19 | — |
| Canada | 1 371 | 4 953 | 1 770 | 3 073 | 6 073 | 6 703 | — | 3 715 | 4 050 | 4 166 | 14 318 |
| tonnes £'000 | 64 | 203 | 53 | 83 | 136 | 263 | — | 165 | 185 | 220 | 749 |
| USA | — | 762 | 47 | 228 | — | — | 507 | 51 | — | — | 2 542 |
| tonnes £'000 | — | 30 | 2 | 10 | — | 19 | 2 | — | — | 26 | — |
| Other Countries | 99 | 5 | 5 | 86 | 30 | 31 | 64 | 62 | 38 | 30 | 2 |
| tonnes £'000 | 6 | — | — | 4 | 2 | 2 | 4 | 5 | 2 | 1 | — |

— Nil or negligible

Source: *Maandstatistiek van de In- en Uit-Voer Central Bureau voor de Statistiek*

Table A16

Rapeseed (including Colza): Imports into Belgium/Luxembourg

| | | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|----------------------------|--------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Totals | tonnes | 1 963 | 3 597 | 901 | 1 886 | 4 036 | 2 730 | 3 994 | 3 079 | 3 034 | 1 885 | 3 995 |
| of which from:— | £'000 | 95 | 145 | 47 | 94 | 182 | 120 | 230 | 157 | 136 | 106 | 255 |
| Denmark | tonnes | 371 | 343 | — | — | — | — | — | — | — | 551 | — |
| | £'000 | 16 | 15 | — | — | — | — | — | — | — | 24 | 43 |
| France | tonnes | — | — | — | — | 1 402 | 495 | 2 239 | — | 735 | — | 1 008 |
| | £'000 | — | — | — | — | 54 | 20 | 143 | — | 20 | — | 81 |
| Netherlands | tonnes | 1 121 | 1 067 | 723 | 1 147 | 1 690 | 859 | 920 | 1 145 | 1 240 | 1 053 | 1 196 |
| | £'000 | 55 | 51 | 38 | 59 | 86 | 45 | 51 | 71 | 70 | 64 | 71 |
| German Democratic Republic | tonnes | — | — | — | — | — | — | — | 1 049 | — | — | — |
| | £'000 | — | — | — | — | — | — | — | 45 | — | — | — |
| Canada | tonnes | 378 | 1 633 | 136 | 574 | 728 | 1 191 | 424 | 460 | 507 | 570 | 951 |
| | £'000 | 17 | 65 | 5 | 27 | 32 | 47 | 18 | 21 | 22 | 26 | 55 |
| Other Countries | tonnes | 93 | 554 | 42 | 165 | 216 | 185 | 411 | 425 | 1 | 262 | 103 |
| | £'000 | 7 | 14 | 4 | 8 | 10 | 8 | 18 | 20 | — | 16 | 5 |

— Nil or negligible

Source: *Commerce extérieur L'Institut National de Statistique*

Table A17
Rape and Colza seed: Exports from France

| | 1961 ^a | 1962 ^a | 1963 ^a | 1964 ^a | 1965 ^a | 1966 | 1967 | 1968 | 1969 | 1970 |
|----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|
| Totals | tonnes £'000 | 31 457 1 802 | 81 923 3 802 | 71 113 4 014 | 119 405 6 256 | 126 367 6 036 | 131 336 5 898 | 103 621 4 737 | 116 632 5 468 | 224 167 13 065 |
| Belgium/Luxembourg | tonnes £'000 | 228 12 | 75 4 | — — | — — | 1 689 61 | 678 27 | 2 239 153 | — — | 735 58 |
| Finland | tonnes £'000 | — — | 2 057 75 | — — | — — | — — | — — | — — | — — | — — |
| German Federal Republic | tonnes £'000 | 1 090 64 | 1 981 96 | 1 561 71 | 4 413 208 | 11 081 487 | 12 323 553 | 15 905 834 | 5 774 475 | 45 606 3 722 |
| Italy | tonnes £'000 | — 36 656 | — 6 416 | — 44 755 | — 36 661 | — 47 934 | — 2 078 | — 30 960 | — 1 314 | — 141 437 |
| Netherlands | tonnes £'000 | 1 825 1 026 | 1 285 1 534 | 224 190 | 1 946 1 526 | 1 526 7 734 | — 2 218 | — 2 218 | 2 945 4 400 | 160 963 7 446 |
| Spain | tonnes £'000 | — — | 90 45 | 60 60 | 8 B | 280 — | — — | 154 186 | 5 294 4 400 | 9 533 1 988 |
| Switzerland | tonnes £'000 | — — | — 85 | — — | — — | — — | — — | — — | 438 104 | 172 — |
| United Kingdom | tonnes £'000 | — — | 5 1 175 | — — | — 3 070 | — 1 175 | — 1 175 | — 3 070 | — 6 531 | — 1 704 |
| German Democratic Republic | tonnes £'000 | — 290 | 42 127 | — — | — 447 | 139 923 | 282 — | 513 — | — — | — — |
| Poland | tonnes £'000 | — — | 6 — | — — | — 25 | 447 — | 923 — | — 58 | — — | — — |
| Algeria | tonnes £'000 | 26 795 1 548 | 38 537 2 232 | 61 417 3 648 | 66 478 4 026 | 59 401 3 240 | 54 039 2 475 | 50 358 2 194 | 40 414 1 861 | 28 176 1 225 |
| Morocco | tonnes £'000 | — — | — — | — — | — — | — — | — 5 013 | — — | — — | — — |
| USA | tonnes £'000 | 1 078 64 | — 7 | — — | — — | — — | — 238 | — — | — — | — — |
| Other Countries | tonnes £'000 | 151 8 | 88 5 | 185 11 | 52 4 | 98 5 | 10 1 | 51 2 | 21 1 | 11 3 |

Notes: — Nil or negligible
 (a) Including mustard and other crucifers

Source: *Commerce extérieur Direction Générale des Douanes et Droits Indirects*

Table A18

Rape and Colza seed: Exports from the German Federal Republic

| Totals | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | |
|--------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|--------|
| of which to:— | tonnes | £'000 | tonnes | £'000 | tonnes | £'000 | tonnes | £'000 | tonnes | £'000 | tonnes | £'000 |
| Austria | — | — | 69 | 50 | 28 | 23 | — | 29 | 84 | 84 | 129 | 83 |
| Belgium/Luxembourg | — | — | 11 | 6 | 3 | 2 | — | 4 | 14 | 17 | 29 | 18 |
| Denmark | — | — | — | — | — | — | — | — | 14 | — | 21 | 32 |
| Finland | — | — | — | — | — | — | 956 | 2 212 | — | — | — | 8 |
| France | — | — | 114 | 7 | — | — | 41 | 93 | — | — | — | — |
| Irish Republic | — | — | 13 | 74 | 143 | 90 | — | 24 | — | — | — | — |
| Italy | — | — | 2 | 12 | 22 | 14 | 14 | 23 | 70 | — | 580 | — |
| Netherlands | — | — | — | — | — | — | — | 3 | 12 | 12 | 51 | — |
| Switzerland | — | — | 450 | — | — | — | — | — | — | 525 | — | — |
| United Kingdom | — | — | 23 | 220 | 173 | 165 | 102 | — | — | 21 | — | — |
| Czechoslovakia | — | — | 172 | 28 | 23 | 21 | 157 | 221 | 6 731 | 938 | 23 765 | 79 864 |
| Algeria | — | — | 23 | — | — | 13 | 30 | 30 | 562 | 80 | 1 757 | 6 357 |
| Other Countries | 17 | 9 | — | — | — | 1 004 | — | 1 045 | — | 3 896 | 3 822 | 3 211 |
| | 1 | — | 3 | — | — | — | — | — | — | — | — | — |

— Nil or negligible

Source: *Der Aussenhandel/ Statistisches Bundesamt*

Table A19

Rape and colza seed: Exports from the Netherlands

| | | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-------------------------|--------|--------|--------|--------|--------|-------|--------|-------|--------|--------|--------|--------|
| Totals | tonnes | 12 328 | 4 496 | 13 377 | 12 361 | 5 578 | 10 641 | 7 785 | 19 989 | 11 820 | 10 091 | 12 304 |
| of which to:- | £'000 | 657 | 254 | 624 | 571 | 314 | 533 | 460 | 1 453 | 722 | 748 | 962 |
| Austria | tonnes | — | 49 | 33 | 33 | 43 | 442 | 70 | 162 | 168 | 36 | 64 |
| | £'000 | — | 3 | 2 | 2 | 2 | 22 | 4 | 8 | 8 | 3 | 5 |
| Belgium/Luxembourg | tonnes | 1 194 | 945 | 630 | 1 037 | 1 330 | 1 310 | 886 | 1 133 | 1 229 | 1 041 | 1 204 |
| | £'000 | 58 | 45 | 30 | 52 | 65 | 64 | 47 | 68 | 67 | 61 | 67 |
| Denmark | tonnes | 33 | 40 | 28 | 36 | 31 | 37 | 41 | 118 | 52 | 61 | 70 |
| | £'000 | 3 | 2 | 1 | 2 | 2 | 2 | 2 | 7 | 3 | 4 | 5 |
| Finland | tonnes | 874 | 10 | — | — | — | — | — | — | — | — | — |
| | £'000 | 47 | 2 | — | — | — | — | — | — | — | — | — |
| France | tonnes | 3 229 | 224 | 2 374 | 215 | 331 | 294 | 393 | 761 | 1 234 | 2 468 | 1 155 |
| | £'000 | 166 | 16 | 109 | 12 | 20 | 18 | 23 | 47 | 84 | 195 | 84 |
| German Federal Republic | tonnes | 1 687 | 1 222 | 1 221 | 6 138 | 1 911 | 5 693 | 3 505 | 14 053 | 4 542 | 4 049 | 7 228 |
| | £'000 | 96 | 65 | 63 | 265 | 106 | 267 | 222 | 1 117 | 328 | 315 | 605 |
| Italy | tonnes | 50 | 81 | 5 075 | 70 | 55 | 44 | 120 | 1 503 | 1 052 | 99 | 29 |
| | £'000 | 3 | 4 | 215 | 4 | 3 | 2 | 7 | 68 | 41 | 7 | 6 |
| Portugal | tonnes | — | 24 | 21 | 48 | 36 | 40 | 41 | 60 | 59 | 69 | 93 |
| | £'000 | — | 2 | 1 | 3 | 2 | 2 | 3 | 4 | 4 | 5 | 7 |
| Spain | tonnes | — | 20 | 84 | 61 | 79 | 98 | 156 | 152 | 329 | 398 | 760 |
| | £'000 | — | 1 | 5 | 3 | 5 | 5 | 9 | 9 | 19 | 26 | 51 |
| Switzerland | tonnes | 227 | 302 | 288 | 185 | 232 | 259 | 265 | 199 | 193 | 126 | 66 |
| | £'000 | 17 | 22 | 22 | 13 | 17 | 19 | 18 | 16 | 15 | 10 | 5 |
| United Kingdom | tonnes | 1 180 | 1 185 | 1 200 | 2 127 | 913 | 1 940 | 1 955 | 1 311 | 2 321 | 1 262 | 1 177 |
| | £'000 | 66 | 69 | 61 | 100 | 52 | 103 | 104 | 74 | 113 | 86 | 90 |
| Czechoslovakia | tonnes | — | — | 1 900 | — | — | — | — | — | — | — | — |
| | £'000 | — | — | 88 | — | 1 932 | — | — | — | — | — | — |
| Poland | tonnes | — | — | — | 88 | — | — | — | — | — | — | — |
| | £'000 | — | — | — | — | — | — | — | — | — | — | — |
| Malaysia | tonnes | — | — | — | — | 53 | 51 | 49 | 46 | 59 | 52 | 23 |
| | £'000 | — | — | — | — | 3 | 3 | 3 | 3 | 4 | 3 | 2 |
| South Africa | tonnes | 33 | 70 | 59 | 63 | 51 | 72 | 79 | 102 | 81 | 150 | 121 |
| | £'000 | 2 | 4 | 3 | 4 | 3 | 4 | 5 | 6 | 6 | 11 | 10 |
| Argentina | tonnes | 29 | — | 15 | 37 | 63 | 32 | 22 | 32 | 45 | 40 | 44 |
| | £'000 | 2 | — | 1 | 3 | 4 | 2 | 1 | 2 | 3 | 3 | 4 |
| USA | tonnes | 390 | 150 | 324 | 259 | 351 | 200 | 66 | 174 | 214 | 19 | — |
| | £'000 | 23 | 8 | 15 | 13 | 21 | 11 | 4 | 11 | 11 | 1 | — |
| Other Countries | tonnes | 3 402 | 174(a) | 125 | 120 | 99 | 129 | 137 | 183 | 242 | 221 | 270 |
| | £'000 | 174 | 11 | 8 | 7 | 9 | 8 | 13 | 9 | 16 | 18 | 21 |

Notes: — Nil or negligible

(a) Of which exports to Algeria were 3 275 tonnes valued at £167 000

Source: Maandstatistiek van de In-Uit-Voer Centraal Bureau voor de Statistiek

Table A20
Rape and colza seed: Exports from Belgium/Luxembourg

| | | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-------------------------|--------|------|------|------|------|------|------------|------------|------------|------------|------------|------|
| Totals | tonnes | 118 | 51 | 34 | 61 | 108 | 50 | 83 | 383 | 161 | 132 | 1047 |
| | £'000 | 6.0 | 3.4 | 1.7 | 4.5 | 7.3 | 3.5 | 5.1 | 31.5 | 15.7 | 10.7 | 85.3 |
| of which to:— | | | | | | | | | | | | |
| France | tonnes | — | — | — | — | — | — | — | 7 | 61 | — | — |
| | £'000 | — | — | — | — | — | — | — | 0.3 | 6.3 | — | — |
| German Federal Republic | tonnes | — | — | — | — | — | — | — | — | 239 | — | 15 |
| | £'000 | — | — | — | — | — | — | — | — | 18.6 | — | 1.1 |
| Netherlands | tonnes | 93 | 44 | 32 | 8 | 46 | ... ... | ... ... | ... ... | ... ... | ... ... | 103 |
| | £'000 | 4.5 | 2.5 | 1.6 | 0.6 | 2.8 | ... ... | ... ... | ... ... | ... ... | ... ... | 8.1 |
| Malaysia | tonnes | — | — | — | — | 49 | — | — | — | — | — | — |
| | £'000 | — | — | — | — | 3.5 | — | — | — | — | — | — |
| Other Countries | tonnes | 25 | 7 | 2 | 53 | 13 | 50 | 76 | 83 | 161 | 14 | 61 |
| | £'000 | 1.5 | 0.9 | 0.1 | 3.9 | 1.0 | 3.5a | 4.8a | 6.6a | 15.7a | 1.5 | 5.1 |

Notes: — Nil or negligible

... Information not shown separately

(a) Probably exports to the Netherlands

Source: *Commerce extérieur L'Institut National de Statistique*

Table A21
Rapeseed oil: Imports into France

| | Information not shown in 1961 | | | | | | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 |
|-----------------------------------|-------------------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Raw – For Industry | tonnes | – | 57 | 115 | 225 | 306 | 20 | 272 | – | – | – | – | – | – | – |
| | £'000 | – | 5 | 11 | 21 | 30 | 1 | 23 | – | – | – | – | – | – | – |
| Raw – Other | tonnes | 80 | 152 | 23 | – | 772 | 288 | 3 433 | 1 080 | 1 080 | 1 080 | 1 080 | 1 080 | 1 080 | 1 364 |
| | £'000 | 7 | 12 | 2 | – | 72 | 24 | 237 | 95 | 95 | 95 | 95 | 95 | 95 | 169 |
| Refined – For Industry | tonnes | – | 1 096 | 754 | 1 067 | 1 165 | 581 | – | – | – | – | – | – | – | 19 |
| | £'000 | – | – | – | – | 122 | 63 | – | – | – | – | – | – | – | 1 |
| Refined – Other | tonnes | – | 3 620 | 183 | – | – | 528 | 3 035 | 1 333 | 1 333 | 1 333 | 1 333 | 1 333 | 1 333 | 2 780 |
| | £'000 | – | 488 | 26 | – | – | 46 | 240 | 90 | 90 | 90 | 90 | 90 | 90 | 328 |
| Totals | tonnes | 80 | 4 925 | 1 075 | 1 292 | 2 243 | 1 417 | 6 740 | 2 967 | 2 967 | 2 967 | 2 967 | 2 967 | 2 967 | 4 163 |
| of which from:— | £'000 | 7 | 622 | 118 | 138 | 224 | 134 | 500 | 239 | 239 | 239 | 239 | 239 | 239 | 498 |
| Belgium/Luxembourg | tonnes | – | – | – | – | – | – | 185 | 1 897 | 1 897 | 1 897 | 1 897 | 1 897 | 1 897 | 409 |
| | £'000 | – | – | – | – | – | – | 15 | 152 | 152 | 152 | 152 | 152 | 152 | 56 |
| German Federal Republic | tonnes | 80 | 978 | 899 | 1 061 | 1 249 | 717 | 4 478 | 2 364 | 2 364 | 2 364 | 2 364 | 2 364 | 2 364 | 1 487 |
| | £'000 | 7 | 101 | 101 | 115 | 130 | 75 | 325 | 180 | 180 | 180 | 180 | 180 | 180 | 171 |
| Netherlands | tonnes | – | 248 | 130 | 229 | 994 | 368 | 251 | – | – | – | – | – | – | 1 396 |
| | £'000 | – | 22 | 13 | 23 | 94 | 33 | 17 | – | – | – | – | – | – | 165 |
| Spain | tonnes | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | £'000 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| German Democratic Republic | tonnes | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | £'000 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Poland | tonnes | – | – | – | – | – | – | 120 | – | – | – | – | – | – | – |
| | £'000 | – | – | – | – | – | – | 10 | – | – | – | – | – | – | – |
| Senegal | tonnes | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | £'000 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Tunisia | tonnes | – | – | – | – | – | – | – | – | – | – | – | – | – | 25 |
| | £'000 | – | – | – | – | – | – | – | – | – | – | – | – | – | 7 |
| Argentina | tonnes | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | £'000 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| USA | tonnes | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | £'000 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Other Countries | tonnes | – | 57 | 46 | 2 | – | – | – | – | – | – | – | – | – | – |
| | £'000 | – | 4 | 4 | – | – | – | – | – | – | – | – | – | – | – |
| | | | | | | | | 27 | 22 | 22 | 22 | 22 | 22 | 22 | 2 |
| | | | | | | | | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 4 |

— Nil or negligible

Source: Commerce Extérieur Direction Générale des douanes et Droits Indirectes

Table A22

Rapeseed oil (including mustard oil): Imports into the German Federal Republic

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|--------------------|----------------|--------------|--------------|--------------|--------------|-----------------|-----------------|-----------------|---------------|-----------------|-----------------|
| Totals | 4 578 £'000 | 4 885 392 | 3 350 236 | 4 700 389 | 7 666 654 | 22 328 1 864 | 27 493 2 032 | 27 235 1 872 | 11 364 844 | 14 998 1 757 | 12 607 1 617 |
| of which from:— | | | | | | | | | | | |
| Belgium/Luxembourg | 1 657 £'000 | — | — | — | 20 | — | — | — | — | — | 38 9 |
| Denmark | 144 tonnes | — | — | — | 2 | — | — | — | — | — | — |
| Finland | 103 £'000 | — | — | — | — | — | — | — | — | — | — |
| France | 848 £'000 | 662 | 848 | — | — | — | — | — | — | — | — |
| Italy | 59 £'000 | 59 | 71 | 55 | 849 | 4 609 | 4 019 | 1 014 | 2 850 | 1 732 | 9 028 |
| Netherlands | 4 £'000 | — | — | 4 | 80 | 388 | 346 | 80 | 211 | 132 | 1 090 |
| Sweden | — | — | — | — | — | — | — | — | — | 648 | 620 |
| Switzerland | — | — | — | — | — | — | — | — | — | 77 | 379 |
| United Kingdom | — | — | — | — | — | — | — | — | — | — | — |
| Czechoslovakia | 686 £'000 | 60 | — | — | — | — | — | — | — | — | — |
| Hungary | 43 £'000 | 43 | — | — | — | — | — | — | — | — | — |
| Poland | 4 £'000 | — | — | — | — | — | — | — | — | — | — |
| China | 51 £'000 | 4 | — | — | — | — | — | — | — | — | — |
| Dahomey | 5 £'000 | 51 | — | — | — | — | — | — | — | — | — |
| Other Countries | 8 £'000 | 80 | 80 | — | — | — | — | — | 40 | — | 5 |
| | | 5 | 5 | — | — | — | — | — | 89 | — | 101 |
| | | — | — | — | — | — | — | — | — | — | 14 |
| | | 3 | 3 | — | — | — | — | — | 33 | — | — |
| | | 7 | 7 | — | — | — | — | — | — | — | — |

— Nil or negligible

Source: *Der Aussenhandel/ Statistisches Bundesamt*

Table A23
Colza oil: Imports into Italy

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 |
|-------------------------|--------------|--------------|-------------|-----------|-----------|--------------|-----------------|-----------------|-----------------|-----------------|
| Totals | 824 £'000 | 1 674 149 | 1 001 82 | 178 18 | 590 70 | 1 479 172 | 19 802 1 665 | 23 683 1 977 | 28 594 2 405 | 22 129 2 724 |
| of which from:— | | | | | | | | | | |
| Belgium/Luxembourg | — | — | — | — | — | — | — | — | — | 319 |
| France | — | — | — | — | — | — | — | 38 | — | 38 |
| Greece | — | — | — | — | — | — | 40 | 9 823 | 6 952 | 5 085 |
| German Federal Republic | — | — | — | — | — | — | 4 | 800 | 596 | 412 |
| Netherlands | 757 £'000 | 1 003 74 | 93 33 | 154 14 | 399 45 | 1 255 152 | 8 578 741 | 15 961 1 300 | 18 702 1 587 | 15 362 1 849 |
| Sweden | — | 42 | — | — | — | 121 | — | 544 | 4 307 | 515 |
| Rumania | — | 5 | — | — | — | 14 | — | 47 | 4 325 | 54 |
| Argentina | 3 £'000 | 590 48 | 491 39 | — | — | 60 | — | 223 | — | — |
| Other Countries | — | — | — | — | — | 7 | — | 22 | — | — |
| — Nil or negligible | — | — | — | — | — | — | — | — | 95 | 36 |

Source: Comercio Con L'Esterò Instituto Centrale Di Statistica

Table A24

Rape and mustard seed oils (industrial): Imports into the Netherlands

| | Not shown separately before year shown | 1969 | 1970 | 1971 |
|----------------------------|--|-------------|-------------|--------|
| Totals | tonnes £'000 | 560 41.2 | 248 30.1 | — — |
| of which from:— | | | | |
| Belgium/Luxembourg | tonnes £'000 | 200 18.7 | — — | — — |
| France | tonnes £'000 | — — | 213 25.7 | — — |
| German Federal Republic | tonnes £'000 | 116 7.3 | — — | — — |
| German Democratic Republic | tonnes £'000 | — — | 35 4.4 | — — |
| Poland | tonnes £'000 | 209 13.8 | — — | — — |
| Other Countries | tonnes £'000 | 35 1.4 | — — | — — |

— Nil or negligible

Source: *Maandstatistiek Van De In-Uit-Voer Centraal Bureau Voor De Statistiek*

Table A25
Rape and mustard seed oil (edible): Imports into Netherlands

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|----------------------------|----------------|--------------|--------------|--------------|---------------|-----------------|--------------|-----------------|-----------------|--------------|----------------|
| Totals | 2 995 £'000 | 5 468 383 | 5 986 417 | 4 051 333 | 11 182 958 | 13 906 1 199 | 9 160 707 | 29 958 2 073 | 22 483 1 609 | 5 848 583 | 9 792 1 200 |
| of which from:— | | | | | | | | | | | |
| Belgium/Luxembourg | — | — | — | — | — | — | — | — | 60 | 82 | 116 |
| Finland | — | — | — | — | — | — | — | — | 4 | 5 | 20 |
| France | 1 233 £'000 | 1 897 117 | 155 | — | — | — | — | — | 112 | — | — |
| German Federal Republic | — | — | — | 834 | 5 939 | 8 816 | 4 216 | 3 814 | — | 2 698 | 1 068 |
| Norway | 977 £'000 | 1 780 104 | 4 420 | 74 | 509 | 762 | 340 | 307 | 200 | 126 | 149 |
| Sweden | — | — | — | 2 553 | 3 826 | 1 200 | 2 211 | 15 541 | 12 705 | 4 458 | 16 |
| Poland | — | — | — | — | — | — | — | — | 1 062 | 916 | 421 |
| People's Republic of China | — | — | — | — | — | — | — | — | — | — | — |
| Argentina | — | — | — | — | — | — | — | — | — | — | — |
| Other Countries | — | — | — | — | — | — | — | — | — | — | — |
| — Nil or negligible | — | — | — | — | — | — | — | — | — | — | — |

Source: Maandstatistiek Van De In-En-Uit-Voer Centraal Bureau Voor De Statistiek

Table A26
Rapeseed oil (edible): Imports into Belgium Luxembourg

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-------------------------|--------|------|------|------|------|------|-------|-------|-------|---------------------------------|-------------------------------------|
| Refined | tonnes | 3 | 2 | 3 | 2 | 5 | 6 | 441 | 20 | 259 | 111 |
| | £'000 | — | — | 1 | — | 1 | 1 | 36 | 2 | 28 | 15 |
| Raw | tonnes | 205 | 393 | 274 | 400 | 928 | 1 968 | 9 374 | 9 423 | 2 420 | 4 773 |
| | £'000 | 21 | 32 | 21 | 34 | 79 | 165 | 657 | 736 | 277 | 559 |
| Totals | tonnes | 208 | 395 | 277 | 402 | 930 | 1 897 | 1 974 | 9 815 | 2 679 | 4 884 |
| | £'000 | 21 | 32 | 22 | 34 | 79 | 166 | 152 | 693 | 738 | 574 |
| of which from:— | | | | | | | | | | | |
| Finland | tonnes | — | 147 | — | — | — | — | — | — | — | — |
| | £'000 | — | 13 | — | — | — | — | — | — | — | — |
| France | tonnes | — | — | — | — | 480 | 1 088 | 1 351 | 3 395 | ... ... ... ... ... | 1 039 120 1 422 160 — |
| | £'000 | — | — | — | — | 37 | 94 | 97 | 254 | — — — — — | 2 720 309 1 275 159 778 |
| German Federal Republic | tonnes | — | — | — | — | 261 | 68 | 500 | 301 | 5 612 | 6 046 |
| | £'000 | — | — | — | — | 21 | 7 | 44 | 23 | 377 | 474 |
| Netherlands | tonnes | 66 | 190 | 114 | 96 | 380 | — | 317 | 432 | 1 502 | — |
| | £'000 | 6 | 15 | 9 | 8 | 34 | — | 31 | 34 | 122 | — |
| Sweden | tonnes | — | — | 57 | — | — | 252 | — | — | — | — |
| | £'000 | — | — | 4 | — | — | 22 | — | — | — | — |
| Poland | tonnes | — | — | 103 | — | — | — | — | — | — | — |
| | £'000 | — | — | 8 | — | — | — | — | — | — | — |
| Other Countries | tonnes | 142 | 58 | 3 | 45 | 2 | 57 | 5 | 376 | 1 895 | 218 |
| | £'000 | 15 | 4 | 1 | 5 | 1 | 6 | 1 | 28 | 142 | 25 |

Notes:— Nil or negligible ... Information not given separately

Source: *Commerce Extérieur L'institut National De Statistique*

Table A27
Rape, colza and mustard oil: Exports from France

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 |
|------------------------------------|---------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|
| RAW – For Industry | | | | | | | | | | |
| tonnes | 3 341 | 3 166 | 432 | 3 127 | 6 157 | 3 402 | 3 074 | 2 738 | 4 400 | 8 220 |
| £'000 | 453 | 402 | 49 | 286 | 538 | 283 | 244 | 195 | 336 | 958 |
| RAW – Not For Industry | | | | | | | | | | |
| tonnes | — | — | 6 250 | 8 266 | 19 352 | 30 185 | 21 377 | 16 148 | 10 299 | 13 083 |
| £'000 | — | — | 611 | 773 | 1 642 | 2 601 | 1 595 | 1 363 | 1 198 | 1 854 |
| PURIFIED – For Industry | | | | | | | | | | |
| tonnes | — | — | — | 1 | 232 | 6 | 11 | 71 | 264 | 167 |
| £'000 | — | — | — | — | 21 | 1 | 1 | 9 | 23 | 21 |
| PURIFIED – Not For Industry | | | | | | | | | | |
| tonnes | — | — | 324 | 336 | 6 562 | 10 126 | 11 238 | 8 026 | 6 819 | 17 952 |
| £'000 | — | — | 33 | 43 | 780 | 1 142 | 1 154 | 938 | 535 | 2 140 |
| Totals | tonnes | 3 341 | 3 166 | 7 006 | 11 730 | 32 303 | 43 719 | 35 700 | 28 983 | 21 782 |
| of which to:— | | | | | | | | | | |
| Andorra | tonnes | — | — | — | — | — | — | — | 93 | 242 |
| Austria | tonnes | — | — | — | — | — | — | — | 11 | 27 |
| Belgium/Luxembourg | tonnes | — | — | 562 | 788 | 237 | — | — | — | 101 |
| Cyprus | tonnes | — | — | 50 | 65 | 20 | — | — | — | — |
| German Federal Republic | tonnes | — | — | — | 480 | 764 | 1 101 | 3 392 | 652 | 1 088 |
| Irish Republic | tonnes | — | — | — | 56 | 64 | 76 | 249 | 57 | 126 |
| Italy | tonnes | — | — | — | — | — | 50 | — | 31 | 43 |
| Netherlands | tonnes | — | — | 74 | 3 353 | 3 656 | 823 | 1 949 | 1 597 | 8 505 |
| Spain | tonnes | — | — | 6 | 269 | 302 | 63 | 146 | 120 | 1 015 |
| Switzerland | tonnes | — | — | — | — | — | — | — | — | 290 |
| Archipelago and Comores | tonnes | — | — | — | — | — | — | — | — | 33 |
| Algeria | tonnes | 3 340 | 3 087 | 6 775 | 10 193 | 18 450 | 3 815 | 2 500 | 670 | 6 805 |
| | £'000 | 453 | 396 | 642 | 954 | 1 614 | 333 | 176 | 53 | 657 |

Table A27 – continued

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|
| Canaries, Ceuta (Spanish) | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Cameroon | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Congo Brazzaville | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Congo Kinshasa | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Gabon | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Malagasy Republic | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Morocco | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Reunion | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Togo | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Tunisia | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Bolivia | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| French Guyana | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Guadeloupe | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Martinique | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Caledonia | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Polynesia | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |
| Other Countries | | | | | | | | | | |
| tonnes | – | – | – | – | – | – | – | – | – | – |
| £'000 | – | – | – | – | – | – | – | – | – | – |

— Nil or negligible

Source: Commerce Extérieur Direction Générale des Douanes et Droits Indirectes

Table A28

Rape, colza and mustard oils: Exports from the German Federal Republic

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-----------------------------------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| RAW – For Industry | tonnes | ... | ... | ... | ... | 5 172 | 11 062 | 37 044 | 29 912 | 15 409 | 43 355 |
| | £'000 | ... | ... | ... | ... | 440 | 820 | 2 536 | 2 143 | 1 664 | 5 308 |
| RAW OR REFINED – Not For Industry | tonnes | ... | ... | ... | ... | 594 | 13 | 940 | 180 | 37 | 205 |
| | £'000 | ... | ... | ... | ... | 55 | 3 | 101 | 18 | 7 | 30 |
| REFINED – For Industry | tonnes | 4 384 | 9 019 | 13 758 | 14 293 | 24 534 | 20 088 | 19 535 | 25 430 | 23 021 | 17 511 |
| | £'000 | 442 | 710 | 1 082 | 1 271 | 2 359 | 2 049 | 1 862 | 2 210 | 2 069 | 2 184 |
| Totals | tonnes | 4 384 | 9 019 | 13 758 | 14 293 | 24 534 | 25 854 | 30 610 | 63 414 | 53 113 | 32 957 |
| | £'000 | 442 | 710 | 1 082 | 1 271 | 2 359 | 2 544 | 2 685 | 4 847 | 4 230 | 3 855 |
| of which to:— | | | | | | | | | | | |
| Austria | tonnes | 641 | 241 | 1 122 | 2 707 | 3 410 | 4 497 | 1 193 | — | — | 72 |
| | £'000 | 65 | 22 | 84 | 236 | 319 | 426 | 115 | — | — | 8 |
| Belgium/Luxembourg | tonnes | — | — | — | 1 610 | — | 335 | 301 | 4 504 | 4 822 | 1 421 |
| | £'000 | — | — | — | — | — | — | 30 | 22 | 370 | 159 |
| Canary Islands | tonnes | — | — | 258 | 114 | — | — | 2 732 | 539 | 514 | 229 |
| | £'000 | — | — | — | 30 | 13 | — | 277 | 43 | 46 | 22 |
| Cyprus | tonnes | 139 | 465 | 547 | 453 | 722 | 1 411 | 1 043 | — | — | — |
| | £'000 | 15 | 43 | 47 | 42 | 72 | 143 | 98 | — | — | — |
| Denmark | tonnes | — | — | 411 | 722 | 990 | 655 | — | — | — | — |
| | £'000 | — | — | 27 | 52 | 76 | 54 | — | — | — | — |
| France | tonnes | 141 | 114 | 765 | 882 | 1 189 | 1 788 | 763 | 4 943 | 1 639 | 1 468 |
| | £'000 | 17 | 12 | 81 | 101 | 132 | 186 | 81 | 342 | 130 | 167 |
| Greece | tonnes | — | — | 23 | 148 | 49 | 31 | 292 | 88 | 384 | 305 |
| | £'000 | — | — | 2 | 13 | 4 | 4 | 29 | 9 | 37 | 28 |
| Irish Republic | tonnes | — | — | — | 31 | — | — | — | — | — | 199 |
| | £'000 | — | — | — | 3 | — | — | — | — | — | — |
| Italy | tonnes | 372 | 1 127 | 446 | 188 | 155 | 1 912 | 9 706 | 16 484 | 18 899 | 15 |
| | £'000 | 37 | 106 | 34 | 17 | 15 | 203 | 788 | 1 233 | 1 524 | 30 883 |
| Netherlands | tonnes | 1 726 | 4 977 | 4 574 | 1 324 | 7 576 | 1 763 | 3 993 | 18 097 | 15 950 | 3 986 |
| | £'000 | 173 | 325 | 310 | 106 | 718 | 153 | 286 | 1 215 | 1 124 | 12 319 |
| Sweden | tonnes | — | — | — | — | — | — | — | 919 | — | 556 |
| | £'000 | — | — | — | — | — | — | — | — | — | 1 536 |
| Switzerland | tonnes | 403 | 1 409 | 946 | 1 778 | 2 105 | 1 534 | — | — | — | 932 |
| | £'000 | 44 | 136 | 119 | 82 | 168 | 207 | 141 | 204 | 143 | 1 532 |
| Turkey | tonnes | — | — | — | — | — | — | — | 552 | — | 212 |
| | £'000 | — | — | — | — | — | — | — | 64 | — | — |

TABLE A28—*continued*

| | 1961 | 1962 | 1963 | 1964 | / | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-----------------------|--------|------|------|-------|-----|------|------|------|-------|-------|------|-------|
| United Kingdom | tonnes | — | — | 1 700 | — | — | — | — | — | — | — | — |
| | £'000 | — | — | 126 | — | — | — | — | — | — | — | — |
| Czechoslovakia | tonnes | 603 | — | 1 664 | 39 | — | — | — | — | — | 500 | 1 300 |
| | £'000 | 57 | — | 153 | 4 | — | — | — | — | — | 60 | 170 |
| Aden | tonnes | — | — | — | 591 | 86 | 75 | — | — | — | — | — |
| Hong Kong | tonnes | — | — | 60 | 9 | 6 | 6 | — | — | — | — | — |
| | £'000 | — | — | — | — | — | — | — | — | — | — | — |
| India | tonnes | — | — | — | — | — | — | — | — | — | — | — |
| Iraq | tonnes | — | — | — | — | — | — | — | — | — | — | — |
| Japan | tonnes | — | — | — | — | — | — | — | — | — | — | — |
| Jordan | tonnes | — | — | — | — | — | 164 | — | — | — | — | — |
| Pakistan | tonnes | — | — | — | — | — | 23 | — | — | — | — | — |
| Taiwan (Formosa) | tonnes | — | — | — | — | 58 | — | 257 | — | — | — | — |
| Saudi Arabia | tonnes | — | — | — | — | 9 | — | — | 27 | — | — | — |
| Singapore | tonnes | — | — | — | — | — | — | 120 | 665 | 315 | 283 | 451 |
| Southern Yemen | tonnes | — | — | — | — | — | — | 10 | 63 | 31 | 39 | 64 |
| Syria | tonnes | — | — | — | — | — | — | — | 88 | 49 | — | — |
| Yemen | tonnes | — | — | — | — | — | — | — | 1 629 | 1 690 | — | — |
| Algeria | tonnes | — | — | — | — | — | — | 113 | 151 | 157 | — | — |
| French Somaliland | tonnes | — | — | — | — | — | — | — | 203 | — | — | — |
| Malagasy Republic | tonnes | — | — | — | — | — | — | — | — | — | — | — |
| | £'000 | — | — | — | — | — | — | — | — | — | — | — |

Table A28 – *continued*

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|--------------------|--------|------|------|-------|-------|-------|-------|-------|-------|------|------|
| Mali | tonnes | — | — | — | — | — | — | — | — | — | — |
| | £'000 | — | — | — | — | — | — | — | — | — | — |
| Mauritius | tonnes | — | — | — | — | 780 | 3 381 | 4 141 | 5 141 | — | — |
| | £'000 | — | — | — | — | 80 | 347 | 379 | 450 | 40 | 21 |
| Sierra Leone | tonnes | 19 | 93 | 8 | — | — | 19 | — | 93 | 3 | — |
| | £'000 | 2 | — | — | — | — | 2 | — | 8 | — | — |
| Somalia | tonnes | — | — | — | — | 313 | 443 | 300 | 1 835 | 828 | — |
| | £'000 | — | — | — | — | 35 | 46 | 28 | 182 | 77 | — |
| Sudan | tonnes | — | — | — | — | 360 | — | — | — | — | — |
| | £'000 | — | — | — | — | 42 | — | — | — | — | — |
| Tanzania | tonnes | 308 | 447 | 1 522 | 195 | 46 | 45 | 37 | — | — | — |
| | £'000 | 30 | 42 | 132 | 17 | 6 | 6 | 4 | — | — | 257 |
| Tunisia | tonnes | — | — | — | — | — | — | — | — | — | — |
| | £'000 | — | — | — | — | 68 | 8 | — | — | — | — |
| Uganda | tonnes | — | — | — | — | — | — | — | — | — | — |
| | £'000 | — | — | — | — | 8 | — | — | — | — | — |
| Canada | tonnes | — | — | — | — | 1 000 | 892 | 640 | 503 | — | — |
| | £'000 | — | — | — | — | 83 | 75 | 49 | 44 | — | — |
| Chile | tonnes | — | — | — | — | — | — | — | 29 | 190 | — |
| | £'000 | — | — | — | — | — | — | — | 3 | 19 | — |
| Dominican Republic | tonnes | — | — | — | — | — | — | — | — | 432 | — |
| | £'000 | — | — | — | — | — | — | — | — | 45 | — |
| French Antilles | tonnes | — | — | — | — | — | — | — | — | — | — |
| | £'000 | 57 | 5 | — | — | — | — | — | — | 50 | — |
| Martinique | tonnes | — | — | — | — | — | — | — | — | — | — |
| | £'000 | — | — | — | — | — | — | — | — | — | — |
| Mexico | tonnes | — | — | — | — | — | — | — | — | 180 | — |
| | £'000 | — | — | — | — | — | — | — | — | 23 | 35 |
| Trinidad | tonnes | — | — | — | — | — | — | — | — | — | — |
| | £'000 | — | — | — | — | — | — | — | — | 695 | 250 |
| United States | tonnes | — | — | — | — | 755 | 770 | 502 | 1 531 | — | — |
| | £'000 | — | — | — | — | 64 | 79 | 49 | 131 | 82 | 30 |
| Australia | tonnes | 70 | 466 | 1 381 | 2 121 | 2 306 | 765 | 1 280 | 1 677 | 401 | — |
| | £'000 | 7 | 45 | 138 | 226 | 226 | 68 | 110 | 138 | 46 | — |
| Other Countries | tonnes | 51 | 92 | 210 | 272 | 274 | 267 | 535 | 812 | 630 | 163 |
| | £'000 | 4 | 10 | 18 | 21 | 33 | 31 | 65 | 80 | 66 | 29 |

— Nil or negligible

... Information not shown separately

Source: *Der Aussenhandel Statistisches Bundesamt*

Table A29

Rapeseed oil: Exports from the Netherlands

| | | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-------------------------|--------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|--------|
| Refined | tonnes | 17 | 1 218 | 1 187 | 376 | 776 | 2 757 | 2 597 | 5 875 | 4 853 | 2 061 | 5 239 |
| | £'000 | 2 | 106 | 111 | 40 | 87 | 314 | 274 | 580 | 537 | 293 | 815 |
| Raw | tonnes | 200 | 8 | 89 | 2 | 470 | 136 | 271 | 912 | 3 002 | 5 378 | 14 926 |
| | £'000 | 23 | 1 | 7 | — | 41 | 13 | 20 | 58 | 244 | 628 | 1 857 |
| Totals | tonnes | 217 | 1 226 | 1 276 | 377 | 1 246 | 2 893 | 2 868 | 6 787 | 7 855 | 7 439 | 20 165 |
| | £'000 | 25 | 107 | 118 | 40 | 128 | 327 | 294 | 638 | 781 | 921 | 2 672 |
| of which to:— | tonnes | — | — | — | — | — | — | — | — | — | — | — |
| Austria | tonnes | — | — | — | — | — | — | — | — | — | — | — |
| Belgium/Luxembourg | tonnes | 7 | 64 | 2 | 349 | 43 | 52 | 4 | 641 | 610 | 262 | 418 |
| Cyprus | tonnes | 1 | 5 | — | — | 30 | 4 | 49 | 54 | 29 | 60 | 55 |
| France | tonnes | — | — | — | — | 17 | 49 | — | — | — | — | — |
| German Federal Republic | tonnes | — | — | — | — | 3 | 5 | — | 3 | — | 9 | 736 |
| Irish Republic | tonnes | — | — | — | — | 143 | 200 | 227 | 200 | 1 396 | 4 218 | 91 |
| Italy | tonnes | 55 | 75 | 107 | 107 | 22 | 41 | 35 | 1 | 117 | 511 | 3 360 |
| Spain | tonnes | 6 | 6 | 12 | 12 | 2 | 3 | — | 10 | — | — | 202 |
| Switzerland | tonnes | 27 | — | — | — | — | — | — | — | 1 | — | 26 |
| United Kingdom | tonnes | 3 | — | — | — | — | — | — | 150 | 1 634 | 723 | 1 651 |
| Aden | tonnes | — | — | — | — | — | — | — | 46 | 36 | 1 190 | 224 |
| Hong Kong | tonnes | — | — | — | — | — | — | — | 5 | 4 | 144 | 211 |
| Indonesia | tonnes | — | — | — | — | — | — | — | 2 | 2 | — | 28 |
| Lebanon | tonnes | — | — | — | — | — | — | — | 4 | — | — | 200 |
| Mauritius | tonnes | — | — | — | — | — | — | — | — | — | — | 22 |
| Muscat | tonnes | — | — | — | — | — | — | — | — | — | — | — |
| Oman | tonnes | — | — | — | — | — | — | — | — | — | — | — |
| | £'000 | 15 | 44 | 6 | 2 | — | — | — | — | — | — | — |

Table A29 – continued

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-----------------------|--------|------|------|------|------|------|------|------|------|------|-------|
| Saudi Arabia | tonnes | – | – | – | – | 10 | 63 | 659 | 420 | 130 | 870 |
| | £'000 | – | – | – | – | 1 | 8 | 68 | 40 | 17 | 135 |
| Algeria | tonnes | – | – | – | – | – | – | – | – | 101 | 3 359 |
| | £'000 | – | – | – | – | – | – | – | – | 600 | 3 359 |
| French Somaliland | tonnes | 53 | 5 | – | – | 96 | 429 | 47 | 341 | 56 | 416 |
| Gibraltar | tonnes | – | – | – | – | 12 | 50 | 5 | 37 | 6 | – |
| Ivory Coast | tonnes | – | – | – | – | – | 123 | 91 | 176 | – | – |
| Liberia | tonnes | – | – | – | – | – | 14 | 9 | 18 | – | – |
| Malagasy Republic | tonnes | – | – | – | – | – | – | – | – | 470 | 1 125 |
| Tanzania | tonnes | 801 | – | – | – | – | – | – | – | 60 | 156 |
| Sierra Leone | tonnes | – | 466 | – | – | – | – | – | – | 18 | 95 |
| Spanish N Africa | tonnes | – | – | 67 | 40 | 18 | 22 | 46 | 62 | 32 | 21 |
| Brazil | tonnes | – | – | – | 2 | 2 | 2 | 3 | 7 | 3 | 250 |
| Chile | tonnes | – | – | – | – | 32 | 25 | – | – | 67 | 40 |
| Guyana | tonnes | – | – | – | – | 3 | 3 | – | – | – | – |
| Jamaica, Trinidad etc | tonnes | – | – | – | – | – | – | – | – | – | – |
| USA | tonnes | – | – | – | – | – | – | – | – | – | – |
| Venezuela | tonnes | – | – | – | – | – | – | – | – | – | – |
| Australia | tonnes | – | – | – | – | – | – | – | – | – | – |
| New Zealand | tonnes | – | – | – | – | – | – | – | – | – | – |
| Other Countries | tonnes | 17 | 53 | 5 | 3 | 58 | 77 | 29 | 145 | 262 | 277 |
| | £'000 | 2 | 6 | 193 | 175 | 7 | 7 | 14 | 26 | 577 | 31 |
| | | | | | | 7 | 7 | 7 | 36 | 57 | 16 |

– Nil or negligible

Source: Maandstatistiek Van De In-Uit-Voer Centraal Bureau Voor De Statistiek

Table A30
Rapeseed oil: Exports from Belgium/Luxembourg

| | | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|----------------------|--------|------|------|------|------|------|------|-------|-------|-------|------|-------|
| Refined | tonnes | - | - | - | - | - | - | 11 | 321 | 1 228 | 564 | 450 |
| | £'000 | - | - | - | - | - | - | 1 | 27 | 98 | 50 | 63 |
| Raw | tonnes | 3 | 1 | 17 | 9 | 5 | - | - | 802 | 165 | 21 | 481 |
| | £'000 | - | - | 2 | 1 | 1 | - | - | 64 | 11 | 2 | 58 |
| Totals | tonnes | 3 | 1 | 17 | 9 | 5 | 11 | 1 123 | 1 393 | 585 | 931 | 2 428 |
| | £'000 | - | - | 2 | 1 | 1 | 1 | 91 | 109 | 52 | 121 | 351 |
| <i>of which to:-</i> | | | | | | | | | | | | |
| France | tonnes | - | - | - | - | - | - | - | 254 | 1 052 | 558 | 427 |
| | £'000 | - | - | - | - | - | - | - | 20 | 79 | 49 | 63 |
| Italy | tonnes | - | - | - | - | - | - | - | 720 | - | - | 299 |
| | £'000 | - | - | - | - | - | - | - | 58 | - | - | - |
| United Kingdom | tonnes | - | - | - | - | - | - | - | - | - | - | 36 |
| | £'000 | - | - | - | - | - | - | - | - | - | - | 156 |
| Other Countries | tonnes | 3 | 1 | 17 | 9 | 5 | 11 | 149 | 341 | 27 | 49 | 19 |
| | £'000 | - | - | 2 | 1 | 1 | 1 | 13 | 30 | 3 | 2 | 4 |

- Nil or negligible

Source: Commerce Extérieur L'institut National De Statistique

Table A31 Rapeseed cake and meal (including mustard and colza): Imports into France

– Nil or negligible : : Information not shown

Source: *Commerce Extérieur* Direction Générale des Douanes et Droits Indirectes

Rapeseed cake and meal: Imports into the German Federal Republic

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-----------------|-----------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|-----------------|-----------------|
| Totals | 18 876 £'000 | 36 158 728 | 27 651 734 | 41 329 1 050 | 43 367 1 072 | 49 556 1 165 | 53 583 1 358 | 26 506 762 | 28 531 768 | 65 824 2 057 | 67 856 2 005 |
| of which from:- | | | | | | | | | | | |
| Austria | | | | | | | | | | | |
| Denmark | 199 £'000 | 1 463 29 | 1 133 28 | — | — | — | — | — | — | — | — |
| Finland | — | — | — | — | — | — | — | — | — | — | — |
| France | — | — | — | — | — | — | — | — | — | — | — |
| Italy | 1 718 £'000 | 1 673 29 | 2 912 32 | 3 885 74 | 4 143 17 244 | 2 548 32 892 | 1 023 33 526 | 6 278 801 | 4 043 783 | 7 323 1 084 | 3 372 1 156 |
| Netherlands | 6 161 £'000 | 18 715 119 | 15 629 380 | 17 244 412 | 445 | 15 423 801 | 40 127 116 | 17 177 1 009 | 108 443 | 21 028 1 084 | 228 566 |
| Turkey | — | — | — | — | — | — | — | — | — | — | — |
| Bulgaria | — | — | — | — | — | — | — | — | — | — | — |
| Hungary | — | — | — | — | — | — | — | — | — | — | — |
| Poland | — | — | — | — | — | — | — | — | — | — | — |
| Pakistan | — | — | — | — | — | — | — | — | — | — | — |
| Algeria | — | — | — | — | — | — | — | — | — | — | — |
| Ethiopia | — | — | — | — | — | — | — | — | — | — | — |
| Sudan | — | — | — | — | — | — | — | — | — | — | — |
| Argentina | — | — | — | — | — | — | — | — | — | — | — |
| Chile | — | — | — | — | — | — | — | — | — | — | — |
| Other Countries | — | — | — | — | — | — | — | — | — | — | — |

— Nil or negligible

Source: Der Außenhandel/ Statistisches Bundesamt

Table A33
Rapeseed cake and meal: Imports into Netherlands

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Totals | tonnes | 25 596 | 25 272 | 33 764 | 21 859 | 26 443 | 46 363 | 26 786 | 40 169 | 59 690 | 35 677 |
| of which from:— | £'000 | 417 | 455 | 750 | 505 | 604 | 1 055 | 650 | 1 080 | 1 532 | 1 004 |
| Belgium/Luxembourg | tonnes | 110 | — | 6 | — | 108 | 526 | 5 | — | 46 | 42 |
| France | £'000 | 3 | — | — | — | 2 | 8 | — | — | 1 | — |
| tonnes | 2 850 | — | — | — | — | — | 10 575 | 3 818 | 11 729 | 26 452 | 8 704 |
| German Federal Republic | £'000 | 43 | — | — | — | — | — | 92 | 313 | 676 | 253 |
| tonnes | 2 259 | 1 085 | 2 613 | 2 159 | 9 794 | 10 760 | 7 294 | 15 681 | 24 314 | 17 570 | 24 184 |
| Italy | £'000 | 36 | 22 | 63 | 51 | 236 | 254 | 177 | 425 | 635 | 516 |
| tonnes | 794 | 806 | — | — | 359 | — | — | 259 | 1 845 | 824 | — |
| Turkey | £'000 | 14 | 16 | — | — | 10 | — | — | 7 | 49 | 21 |
| tonnes | — | — | 57 | 880 | — | — | — | 577 | 747 | 98 | — |
| United Kingdom | £'000 | — | — | 2 | 23 | — | — | 15 | 17 | 3 | — |
| tonnes | — | — | — | — | 714 | 201 | — | — | — | — | — |
| Pakistan | £'000 | — | — | — | 10 | 3 | — | — | — | — | — |
| tonnes | 5 860 | 13 128 | 16 596 | 11 881 | 9 657 | 10 473 | 7 623 | 2 234 | 161 | — | — |
| Algeria | £'000 | 95 | — | 228 | 350 | 267 | 190 | 243 | 186 | 57 | 4 |
| tonnes | 6 924 | 1 047 | 2 558 | 269 | 845 | 515 | — | — | — | — | — |
| Ethiopia | £'000 | 111 | 18 | 60 | 6 | 20 | 12 | — | — | — | — |
| tonnes | 4 565 | 5 470 | 8 713 | 4 980 | 3 551 | 4 472 | 3 998 | 4 998 | 4 363 | 2 859 | 2 365 |
| Morocco | £'000 | 78 | 107 | 204 | 127 | 91 | 106 | 95 | 137 | 109 | 80 |
| Argentina | £'000 | — | — | 4 | — | — | 449 | — | — | 823 | 981 |
| tonnes | 964 | — | 340 | 235 | 640 | 562 | — | — | — | 389 | 123 |
| Canada | £'000 | 16 | — | 8 | 4 | 15 | 12 | — | — | — | — |
| tonnes | 26 | — | — | — | — | — | — | 100 | 721 | 5 | 26 |
| Chile | tonnes | 830 | 3 307 | 2 556 | 260 | 1 044 | 7 157 | 1 810 | 3 343 | 1 405 | 78 |
| Other Countries | £'000 | 13 | 55 | 57 | 6 | 30 | 156 | 46 | 91 | 35 | 93 |
| tonnes | 414 | 429 | 128 | 481 | 244 | 297 | 1 232 | 141 | 192 | 544 | 640 |
| | £'000 | 7 | 9 | 2 | 11 | 7 | 5 | 30 | 3 | 7 | 22 |

— Nil or negligible

Source: Maandstatistiek van de In- en Uit-Voer Centraal Bureau voor de Statistiek

Table A34
Rapeseed cake and meal: Imports into Belgium and Luxembourg (a)

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|
| Totals | 16 633 £'000 | 18 655 288 | 17 110 395 | 17 437 417 | 24 878 446 | 36 601 842 | 30 723 764 | 38 950 1 080 | 43 387 1 117 | 35 130 1 152 | 63 838 1 936 |
| of which from: | | | | | | | | | | | |
| France | 14 131 £'000 | 5 766 243 | 2 138 118 | 4 937 55 | 17 304 123 | 28 457 441 | 20 341 665 | 32 087 502 | 36 785 890 | 29 600 948 | 62 192 980 |
| German Federal Republic | — £'000 | 5 103 — | 6 469 115 | 6 755 156 | 4 395 175 | — 111 | — 150 | — 150 | — 156 | — 156 | — 156 |
| Italy | — £'000 | 1 935 — | — 41 | — 748 | — 19 | — 18 | — 12 | — 598 | — 370 | — — | — — |
| Netherlands | 331 £'000 | 1 479 7 | 35 — | 19 1 214 | 12 695 | — — | — — | — — | — — | — — | — — |
| Pakistan | — £'000 | — — | — 2 521 | — 4 854 | — 1 292 | — — | — — | — — | — — | — — | — — |
| Algeria | — £'000 | — — | — 51 | — 122 | — 35 | — — | — — | — — | — — | — — | — — |
| Chile | — £'000 | — 2 171 | — 986 | — 17 | — 39 | — 74 | — 34 | — 1 391 | — — | — — | — — |
| Other Countries | — £'000 | — 38 | — 18 | — — | 165 5 | 1 418 31 | 8 144 5 | 4 439 177 | 6 863 112 | 505 190 | 5 530 13 |

Notes: (a) Includes cake and meal from similar seeds — Nil or negligible

Source: *Commerce Extérieur L'Institut National de Statistique*

Table A35
Cake and meal of colza, rape, mustard and other crucifers: Exports from France

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 |
|-------------------------|---------------------------|--------------|--------------|--------------|---------------|-----------------|---------------|-----------------|-----------------|-----------------|
| Totals | 19 988 tonnes £'000 | 6 997 140 | 5 070 126 | 9 644 233 | 30 755 769 | 59 217 2 330 | 40 224 957 | 77 997 2 096 | 99 886 2 469 | 65 159 2 027 |
| of which to: | | | | | | | | | | |
| Belgium/Luxembourg | 14 638 tonnes £'000 | 5 613 247 | 2 168 113 | 4 882 56 | 17 296 119 | 28 800 433 | 21 187 661 | 31 533 511 | 36 558 864 | 29 352 919 |
| Denmark | — tonnes £'000 | — — | — — | — — | — — | — 1 823 | — 39 | — 11 | — 500 | — — |
| German Federal Republic | 1 771 tonnes £'000 | 1 384 29 | 1 902 27 | 4 133 47 | 4 246 101 | 2 115 111 | 1 244 49 | 6 789 32 | 4 037 188 | 5 949 101 |
| Irish Republic | — tonnes £'000 | — — | — — | — — | — — | — 376 | — — | — — | — — | — — |
| Italy | — tonnes £'000 | — — | — — | — — | — — | — — | — 10 | — — | — — | — — |
| Netherlands | 2 850 tonnes £'000 | — 42 | — — | — — | — 1 000 | — 23 | — 8 | — 3662 | — 12 666 | — 27 028 |
| Norway | — tonnes £'000 | — — | — — | — — | — — | — 2 164 | — 4 104 | — 10 719 | — 10 091 | — 11 875 |
| Portugal | — tonnes £'000 | — — | — — | — — | — — | — 492 | — 2 670 | — — | — 281 | — 265 |
| Sweden | 720 tonnes £'000 | — — | — — | — — | — — | — — | — 11 | — 58 | — — | — — |
| United Kingdom | — tonnes £'000 | — — | — — | — — | — 629 | — 13 | — 146 | — 122 | — 79 | — 15 698 |
| Other Countries | 9 tonnes £'000 | — 1 | — — | — — | — — | — — | — 56 | — 20 | — 399 | — 513 |
| | | | | | | | 2 29(a) | — — | — 385 | — 9 |

Notes: (a) Including exports to Spain 1 249 met. tons valued £27 600 — nil or negligible

Source: *Commerce Extérieur*, Direction Générale des Douanes et Droit Indirects

Table A36

Rapeseed and colza cake and meal: Exports from the German Federal Republic

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|--------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|
| Totals | 21 563 £'000 | 19 722 442 | 36 278 864 | 23 170 565 | 37 747 972 | 39 820 943 | 37 762 905 | 50 131 1 381 | 66 011 1 656 | 40 452 1 161 | 58 140 1 725 |
| of which to:— | | | | | | | | | | | |
| Austria | — | — | — | — | — | — | — | — | 315 | — | — |
| Belgium/Luxembourg | — | — | 4 852 103 | 6 792 158 | 6 448 160 | 4 829 124 | 3 025 72 | 6 363 154 | 6 069 171 | — | — |
| Denmark | 2 652 £'000 | 1 680 43 | 5 565 34 | 4 271 123 | 4 730 102 | 4 721 115 | 6 188 143 | 7 447 174 | 8 550 238 | 9 870 263 | 7 458 212 |
| France | — | 380 | 2 433 | 568 | — | — | — | — | 250 | — | — |
| Germany | £'000 | — | 8 | 53 | 13 | — | — | — | 7 | — | — |
| Netherlands | 2 001 £'000 | 1 125 31 | 2 647 21 | 2 156 62 | 8 280 47 | 11 942 206 | 15 248 284 | 7 851 191 | 22 733 4 16 | 17 837 586 | 21 242 521 |
| Norway | 5 644 £'000 | 3 971 84 | 14 717 93 | 6 964 374 | 19 508 173 | 8 287 516 | 4 226 197 | 4 131 100 | 7 461 120 | 6 482 185 | 3 016 181 |
| Sweden | 7 946 £'000 | 840 140 | — | — | — | 8 597 — | 1 039 — | — | — | — | 1 341 |
| United Kingdom | 3 260 £'000 | 6 874 53 | 4 124 168 | 2 763 94 | 399 72 | 1 779 11 | 10 836 43 | 15 327 262 | 19 878 418 | 6 059 471 | 9 776 168 |
| Iran | — | — | — | — | — | — | — | — | — | — | 98 |
| Other Countries | £'000 | — | — | — | — | — | — | — | — | — | 7 |
| | tonnes | 1 | — | — | — | — | — | 2 | — | — | — |

— Nil or negligible

Source: *Der Aussenhandel Statistisches Bundesamt*

Table A37 Rape and colza cake and meal: Exports from Italy

| Information not available before date shown | | | | | | | | | | |
|---|-----------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|---------------|---------------|-----------------|
| Totals | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
| of which to:- | | | | | | | | | | |
| Austria | tonnes £'000 | 43 601 836 | 31 875 755 | 25 303 628 | 52 428 1 192 | 67 744 1 408 | 82 857 1 863 | 30 792 813 | 32 966 824 | 68 784 1 939 |
| France | tonnes £'000 | 6 7 300 | 16 10 931 | 57 4 355 | 93 3 934 | 159 2 258 | 152 4 303 | 79 1 000 | 125 98 | 184 3 490 |
| German Federal Republic | tonnes £'000 | 148 16 007 | 252 16 292 | 103 14 461 | 90 31 170 | 48 34 914 | 98 36 994 | 26 13 387 | 3 20 904 | 7 859 106 |
| Netherlands | tonnes £'000 | 331 1 918 | 403 — | 369 — | 726 416 | 756 — | 849 270 | 368 — | 533 3 600 | 22 — |
| Norway | tonnes £'000 | 31 757 | — — | — — | 10 — | — 1 198 | 6 16 139 | — 3 299 | 80 — | — 2 907 |
| Sweden | tonnes £'000 | 13 2 409 | — — | — — | — — | 23 348 | 84 — | — — | 81 — | 60 — |
| Switzerland | tonnes £'000 | 36 1 553 | — 3 791 | — 4 088 | — 2 731 | — 2 436 | — 3 374 | — 1 338 | — 398 | — 348 |
| United Kingdom | tonnes £'000 | 28 12 043 | 79 — | 98 21 | 62 184 | 51 298 | 77 230 | 36 193 | 10 50 | 11 1950 |
| Czechoslovakia | tonnes £'000 | — — | — — | — — | — — | — — | — — | — — | 20 — | 39 8 438 |
| Hungary | tonnes £'000 | 496 11 | — — | — — | — — | — — | 1 942 41 | — — | 1 000 27 | — — |
| Yugoslavia | tonnes £'000 | — 807 | — — | — — | 993 — | 1 490 — | 209 — | — — | — 100 | — — |
| USA | tonnes £'000 | — 180 | — 15 | — — | 23 90 | 30 — | 3 — | — 2 | — 145 | 36 1 001 |
| Other Countries | — — | — — | — — | — — | 98 — | — — | — — | — — | — — | 1 22 |

- Nil or negligible

Source: Comercio con L'Estero, Istituto Centrale di Statistica

Table A38

Rapeseed cake and meal: Exports from the Netherlands

| | | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-------------------------|-----------------|----------|-------------|-------------|-----------|-----------|-------------|-------------|-----------|-----------|--------------|--------------|
| Totals | tonnes £'000 | 411 9 | 2 796 69 | 2 253 58 | 661 19 | 407 12 | 2 589 66 | 1 438 39 | 409 12 | 697 14 | 3 362 110 | 5 242 157 |
| of which to:- | | | | | | | | | | | | |
| Belgium/Luxembourg | tonnes £'000 | 328 7 | 1 066 26 | 714 19 | 629 18 | 391 11 | 460 12 | 115 3 | 220 4 | — | 1 310 43 | — |
| Denmark | tonnes £'000 | — — | 241 6 | 375 9 | — — | — — | 630 17 | — — | — — | — | — | — |
| German Federal Republic | tonnes £'000 | 83 2 | 1 063 26 | 1 164 30 | — — | — — | 568 14 | 1 318 35 | 187 14 | 697 14 | 1 925 62 | 5 242 157 |
| Gibraltar | tonnes £'000 | — — | — — | — — | — — | — — | — — | — — | — — | — — | 126 4 | — |
| United Kingdom | tonnes £'000 | — — | 426 11 | — — | — — | — — | — — | 931 23 | — — | — — | — — | — |
| Other Countries | tonnes £'000 | — — | — — | — — | 32 1 | 16 1 | — — | 5 1 | 2 3 | — — | 1 1 | — |

— nil or negligible

Source: *Maandstatistiek van de In-Uit-Voer Centraal Bureau voor de Statistiek*

Table A39
Rapeseed cake and meal: Exports from Belgium and Luxembourg (a)

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 |
|-------------------------|--------|------|------|------|------|------|------|------|------|------|------|
| Totals | tonnes | 122 | 94 | 34 | 14 | 40 | 471 | 639 | 344 | 185 | 203 |
| | £'000 | 3 | 2 | 1 | 1 | 1 | 11 | 16 | 10 | 5 | 6 |
| of which to: | tonnes | — | — | — | — | — | 249 | 634 | 344 | — | — |
| France | £'000 | — | — | — | — | — | 6 | 16 | 10 | — | 181 |
| German Federal Republic | tonnes | — | — | — | — | — | 222 | — | — | — | 5 |
| Netherlands | £'000 | — | — | — | — | — | 5 | — | — | — | — |
| Other Countries | tonnes | 122 | 94 | 6 | — | — | — | — | — | — | — |
| | £'000 | 3 | 2 | — | — | — | — | — | — | — | — |
| | tonnes | — | — | 28 | 14 | 40 | — | — | — | — | — |
| | £'000 | — | — | 1 | 1 | 1 | — | — | 5 | 1 | 5 |

Notes: — nil or negligible (a) Includes cake and meal from similar seeds

Source: *Commerce Extérieur* L'Institut National de Statistique

Appendix B

The UK and EEC tariffs applicable at 1 January 1975

| Brussels Nomen- clature | Item | Import Duties (per cent <i>ad valorem</i>) | | | |
|-------------------------------|---|---|---------------------------------|------------|--------------|
| | | UK | | EEC/CCT | |
| | | Full | Preferential | autonomous | conventional |
| | | | | | |
| 15.07 | Fixed vegetable oils, fluid or solid, crude, refined or purified. | | | | |
| | Rapeseed oil: for technical or industrial uses other than the manufacture of foodstuffs for human consumption | | | | |
| | crude | 9.0% | M. 6.0% C1. 3.0% C2. Free | 5% (1)(2) | 5% (1) |
| | other | 10.8% | M. 6.0% C1. 4.8% C2. Free | 8% (1)(2) | 8% (1) |
| | Rapeseed oil: | | | | |
| | solid, in immediate packings of a net capacity of 1 kg or less | 16.0% | M. 4% C1. 12% C2. Free | 20% (2) | — |
| | solid, other, fluid | | | | |
| | crude | 12.0% | M. 6% C1. 6% C2. Free | 10% (2) | 10% |
| | other | 15.0% | M. 6% C1. 9% C2. Free | 15% (2) | 15% |
| 23.04 | Rapeseed meal (including pelletised meal) | 40.0% | C1. }Free C2. } | Free | Free |

Notes: (a) The customs duties applicable to imported goods originating in countries which are Contracting Parties to the General Agreement on Tariffs and Trade or with which the EEC has concluded agreements containing the most favoured nation tariff clause shall be the conventional duties (or duties resulting from conventions); until such time as a common trade policy enters into force in this respect, the "conventional" rates shall apply to goods other than those referred to above, imported from any third country. Where no "conventional" duty is shown against a heading or subheading, or where the rate of the "conventional" duty is higher than that of the autonomous duty, duty shall be chargeable at the rate of the autonomous duty.

(1) Entry under this heading is subject to conditions to be determined by the competent authorities.

(2) In certain conditions, the collection of a compensatory amount is provided for in addition to the customs duty.

M. Preferential rate at which goods consigned from EEC countries may enter the U.K.

C1. Rate of duty applicable to all goods from countries formerly in the Commonwealth Preference Area.

C2. Rate of duty applicable to goods from those countries listed in Appendix C, and those from the Republic of Ireland and Channel Islands.

Appendix C

The Annex VI Countries

List of countries of the Commonwealth Preference Area to whom preferential rates of duty apply under symbol C2. of preferential duties in the UK tariff.

| | |
|---------------------------------|--|
| Bahamas | Malawi |
| Barbados | Mauritius |
| Belize | Montserrat |
| Bermuda | Nigeria |
| Botswana | Papua New Guinea |
| British Antarctic Territory | Pitcairn |
| British Indian Ocean Territory | Republic of Ireland |
| British Solomon Islands | St. Helena & Dependencies |
| British Virgin Islands | Sierra Leone |
| Brunei | Swaziland |
| Cayman Islands | Tanzania |
| Central & Southern Line Islands | Tonga |
| Channel Islands | Trinidad and Tobago |
| Cyprus | Turks & Caicos Islands |
| Falkland Islands & Dependencies | Uganda |
| Fiji | Western Samoa |
| The Gambia | Zambia |
| Ghana | Associated States in the Caribbean: Antigua, Dominica, Grenada, St. Lucia, St. Vincent, St. Christopher Nevis, Anguilla |
| Gilbert & Ellice Islands | |
| Guyana | |
| Jamaica | |
| Lesotho | |

Appendix D

The Lomé Convention

List of the forty-six countries in Africa, the Caribbean and the Pacific (the ACP) which are included in the Convention.

| | |
|--------------------------|---------------------|
| Bahamas | Liberia |
| Barbados | Malagasy Republic |
| Botswana | Malawi |
| Burundi | Mali |
| Cameroon | Mauritania |
| Central African Republic | Mauritius |
| Chad | Niger |
| Congo | Nigeria |
| Dahomey | Rwanda |
| Equatorial Guinea | Senegal |
| Ethiopia | Sierra Leone |
| Fiji | Somalia |
| Gabon | Swaziland |
| Gambia | Sudan |
| Ghana | Tanzania |
| Grenada | Togo |
| Guinea | Tonga |
| Guinea Bissau | Trinidad and Tobago |
| Guyana | Uganda |
| Ivory Coast | Upper Volta |
| Jamaica | Western Samoa |
| Kenya | Zaire |
| Lesotho | Zambia |

Appendix E

Trade associations and importers of rapeseed and rapeseed by-products in the UK and EEC

Note: The following list gives the names of some of the firms which are known to the Tropical Products Institute to be trading in this commodity, but the list should not be regarded as exhaustive. Inclusion in the list does not imply that TPI has any knowledge of the financial standing of the firms.

TRADE ASSOCIATIONS IN THE UK

Seed Crushers' and Oil Processors' Association
1/2 Castle Lane
Buckingham Gate
London SW1E 6DL

Federation of Oils Seeds and Fats Associations Ltd (FOSFA)
24 St Mary Axe
London EC3A 8ER

Grain and Feed Traders Association Ltd (GAFTA)
Baltic Exchange Chambers
28 St Mary Axe
London EC3A 8EP

RAPESEED (Importers and seed crushers). The companies marked with an asterisk are seed crushers.

T. D. Bailey & Sons Limited
56 Moorgate
London EC2R 6EX

J. Bibby & Sons Ltd*
57 Great Howard Street
Liverpool L3 7AW

BOCM Silcock Ltd (Unilever)*
Basing View
Basingstoke
Hants

Chambers and Fargus Limited*
189–197 Wincolmlee
Hull
Yorks HU2 0QA

Clyde Oil Extraction Ltd*
King George V Dock
Glasgow
SW1

Continental (London) Ltd
Creechurch House
Creechurch Lane
London EC3A 5DR

Croda Premier Oils Ltd*
Ann Watson Street
Stoneferry
Hull HU8 0BJ

Unilever (Raw Materials) Ltd
Unilever House
Blackfriars
London EC4

Bunge & Co. Limited,
Bunge House
St. Mary Axe
London EC3

Edible Oil Products (UK) Ltd (oil only)
30 Orchard Place
London E14 0JH

European Grain and Shipping Ltd
16 Finsbury Circus
London
EC2M 7BY

Faure Fairclough Ltd
14/18 Holborn
London EC2N 2PR

Frank Fehr & Co Ltd
Prince Rupert House
64 Queen Street
London EC4R 1ER

Macleod-Frentzel & Co Ltd (vegetable protein for animal feed only)
2 Corn Exchange Chambers
Seething Lane
London EC3

Oriel Central Oil Co Ltd (oil only)
Oriel Street,
Liverpool L69 3HZ

Powell Union Produce Ltd (seed and meal)
71 St Mary Axe
London EC3A 8AX

J. H. Rayner (Mincing Lane) Ltd
(seed and meal)
50 Mark Lane
London EC3R 7RJ

Tradax England Limited
3rd Floor
Kempson House
35/37 Camomile Street
London EC3

EUROPEAN TRADE ASSOCIATIONS

Companies trading in rapeseed or rapeseed products were not consulted for this report but as in the UK a number of trade federations exist which could be of use to potential exporters and these are listed below:—

Seed Crushers' Associations

Belgium Federation des Fabricants d'Huiles de Belgique
 Rue de la Loi 83
 1040 Brussels

France Syndicat General des Fabricants d'Huile et de Torteaux de France
 10 Rue de la Paix
 Paris 2

Germany Verband Deutscher Oelmuhlen e.V.
 53 Bonn-Bad Godesberg 1
 Kronprinzenstrasse 24

Italy Associazioni Italiana dell'Industria Olearia
 3 Via del Governo Vecchio
 Piazza dell'Orologio
 00186 Rome

Netherlands Vereniging van Nederlandse Oliefabrikanten
 Raamweg 44
 The Hague

Animal Feed Trade Associations

European Federation Européene des Fabricants d'Aliments Composés pour Animaux (FEFAC)
(European Feed Manufacturers Association)
Rue de la Loi 223
B-1040 Brussels
Belgium

European Federation of Animal Protein Importers
C/O Verein der Getreidehandler der Hamburgen Borse e.V.
Borse 24
Hamburg 11

Belgium

Association Professionnelle des Fabricants
d'Aliments Composés pour Animaux
(APFACA)
Rue de l'Hôpital 31
1000 Brussels

France

Syndicat des Industriels de
l'Alimentation Animale (SNIA)
41 bis Bd de Latour Maubourg
75 Paris 7eme

Germany

Fachverband der Futtermittellindustrie e.v.
Borsenbrücke 2a
2,000 Hamburg 11

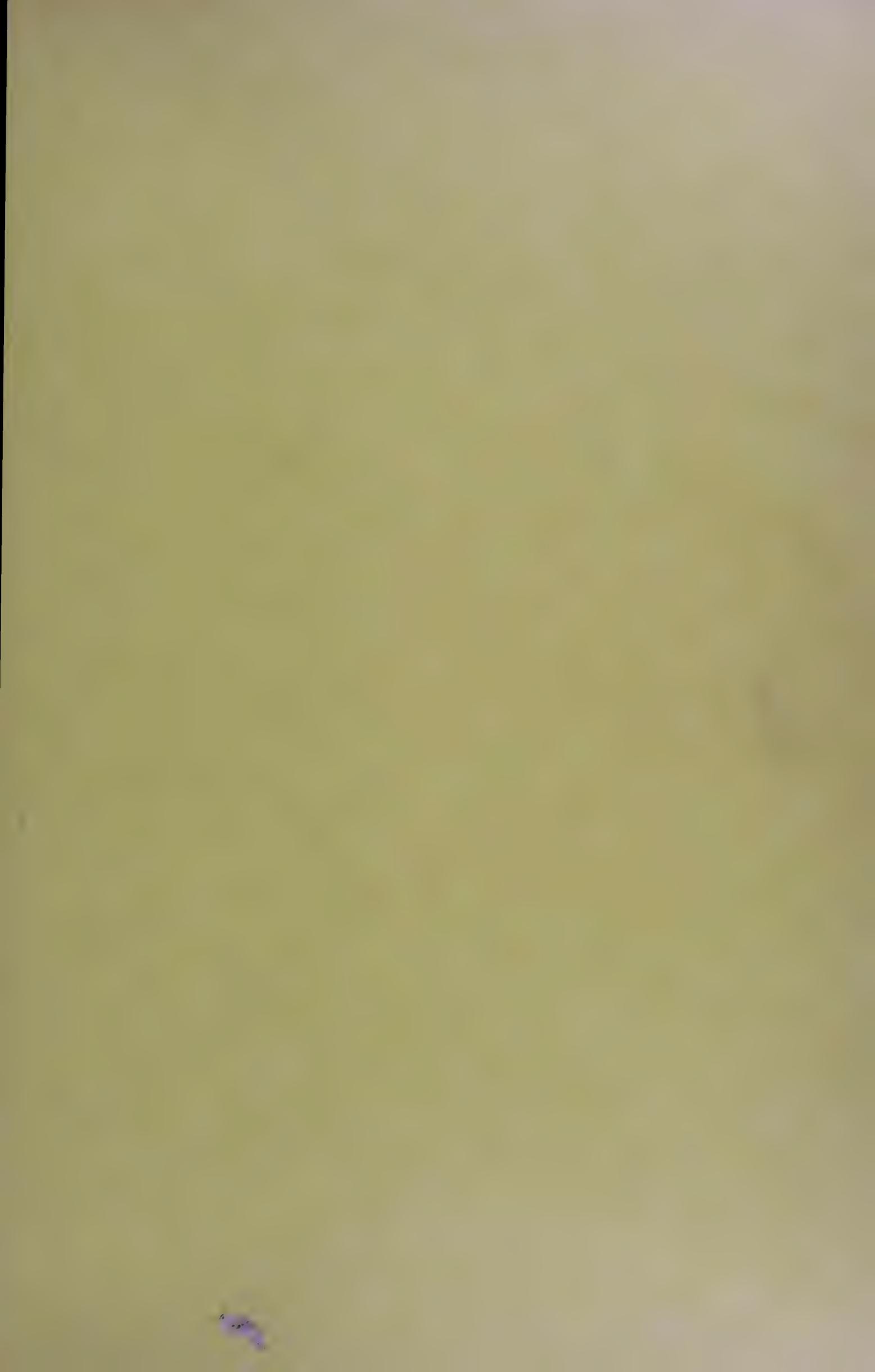
Italy

Associazione Nazionale Trai i Produttori
di Alimenti Zootecnici (Assalzoo)
Vicolo S. Maria Alla Porta 1 Milano
Via Boncompagni 16
Roma 00187

Netherlands

Vereniging van Nederlandse Mengvoederfabrikanten
(Association of Netherlands Animal Feeding Stuffs
Manufacturers)
Johan de Witt Laan 12
P.O. Box 9477
Den Haag





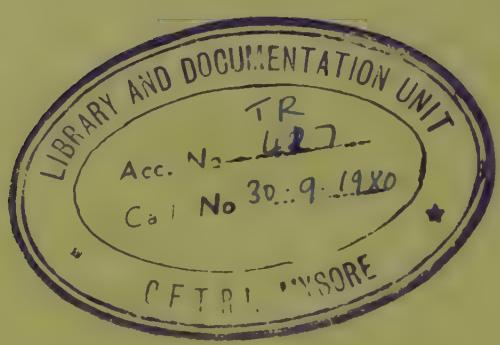
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01

The market for asparagus in selected Western European countries



1st Coll. Oct. 1976



The market for asparagus in selected Western European countries

Patricia King

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NOTES

1. Metric tonnes and kilograms are the standard units of weight used throughout this report, but where the UK market is concerned weights are often given in pounds as this is the unit which the trade uses.
2. Import values and unit prices for importing countries are shown in their national currencies for the following reasons:
 - (a) During the late 1960's and early 1970's there were several revaluations and devaluations and this, together with the floating of various currencies made the use of a standardised unit extremely difficult and unrealistic, particularly as regards following trends in individual markets.
 - (b) Exporters no doubt wish to know the price structure and likely returns for their produce in the currencies in which they will be paid; these will in general be the national currencies of the countries concerned. However, there is a section using standardised prices, pence (p) (100p = £1), where inter-country comparisons are made.
3. It should be noted that throughout the text the Federal Republic of Germany and Belgium/Luxembourg are referred to as Germany and Belgium respectively.

Summary and conclusions

The market for asparagus in selected Western European countries

1. Asparagus is indigenous to temperate regions but can be grown successfully in sub-tropical areas. As this crop is highly perishable, areas chosen for the production of asparagus for export should have good transport facilities and any asparagus imported from countries outside Europe must be sent by air.
2. Production in Europe is discussed. With the exception of Germany and Switzerland, most countries are able to produce enough asparagus to meet domestic demand, thus imports are usually fairly low.
3. The main supplier of air-freighted asparagus to Europe is the USA, other suppliers include Mexico, Tunisia, Morocco, South Africa, Peru, Kenya and New Zealand. Production in the USA and Mexico is reviewed briefly.
4. Total imports into Western Europe ranged between 14 012 tonnes and 16 483 tonnes – see Table 1; Germany accounted for over 70% of total imports. The bulk of this trade is between European countries.
5. The largest importers of air-freight asparagus are the UK and Italy; imports into the UK average around 200 tonnes per annum, while imports into Italy, which averaged around 120 tonnes in the early 1970's, jumped to 315 tonnes in 1973. In Belgium, Denmark, the Netherlands, Switzerland and Sweden imports from non-European suppliers (ie air-freighted asparagus) average under 10 tonnes per annum.
6. Most of the import trade in asparagus takes place between April and June as this is when European production is at a peak. Very little asparagus is imported in the rest of the year as, apart from the UK and Italy, demand at this time is minimal and imported asparagus is very expensive.
7. In continental Europe asparagus is widely sold through retail outlets, as well as being used in the catering industry. However, in the UK, even when domestic production of asparagus reaches a peak, it is sold mainly to the catering trade and luxury retail outlets. In all countries air-freighted asparagus goes mainly to the catering trade, with occasional supplies to luxury retail outlets.
8. Average cif prices are quoted for asparagus from various sources for the years 1969–1973. In general, import prices have tended to fluctuate and in most countries no trend is discernible. Air-freighted asparagus usually fetches two to three times the price paid for European-grown asparagus.
9. A wholesale price series is only available for the UK. Prices are lowest in May/June when domestic and European production is on the market and highest in the winter months, although prices do vary within given months according to source and quality.

10. An inter-country price comparison for air-freighted asparagus shows that prices are particularly low in Sweden and high in the UK, France and Germany.

11. Quality requirements are discussed. In the UK the preference is for green asparagus, whereas on the Continent the preference is for white. Asparagus should be harvested when the bud scales are tight and cooled quickly to remove the field heat. It should preferably be packed in bundles weighing 1 kg or ½ kg and air-freighted to Europe in fibreboard or wood pyramidal containers or in single layer fibreboard cartons.

12. All suppliers of asparagus to the enlarged EEC must comply with the EEC standard which is set out in Appendix B. This standard gives minimum requirements for external appearance for all classes of asparagus, eg shape, size, colour etc.

13. Barriers to trade in the form of tariffs and phyto-sanitary regulations are examined. The UK's and Denmark's tariffs will be in alignment with the EEC tariff of 16% by 1 January 1978. Switzerland and Sweden have specific tariffs – details of tariffs are given on page 27. Germany has regulations on permitted levels of chemical residues which apply to fresh produce, including asparagus.

14. The implications of tariff changes on the UK market following entry into the EEC are considered. It is concluded that EEC members will have improved prospects, and that Commonwealth countries will face greater competition than hitherto.

15. Prospects for a new supplier are considered. In general, there is lack of demand in Continental Europe for air-freighted asparagus because (a) few people are prepared to pay the high price for air-freighted asparagus and (b) tinned asparagus is a cheap and acceptable substitute. Although there is a relatively large market in Italy, the USA is so dominant that there appears to be little room for another supplier. The UK appears to be the only market which offers much hope for a prospective new supplier, in particular in the period September to December, but it must be emphasised that a high price will only be achieved on this market if the asparagus is of high quality.

RESUME ET CONCLUSIONS

Le marché des asperges dans certains pays choisis d'Europe Occidentale

1. L'asperge est un produit des régions tempérées, mais elle peut être cultivée avec succès dans des régions subtropicales. Etant donné que ce produit est extrêmement périssable, les régions choisies pour la production d'asperges pour l'exportation doivent disposer de bonnes possibilités de transport et les asperges importées de pays hors d'Europe doivent être expédiées par air.

2. La production en Europe est discutée. A l'exception de l'Allemagne et de la Suisse, la plupart des pays sont susceptibles de produire suffisamment d'asperges pour faire face à leur propre demande, c'est pourquoi, les importations sont habituellement assez faibles.

3. Les Etats-Unis sont les principaux fournisseurs d'asperges expédiées par air en Europe; les autres fournisseurs sont le Mexique, la Tunisie, le Maroc, L'Afrique du Sud, le Pérou, le Kenya et la Nouvelle-Zélande. La production aux Etats-Unis et au Mexique est analysée brièvement.

4. Les importations en Europe Occidentale se sont élevées à un total allant de 14.012 tonnes à 16.483 tonnes – voir tableau 1; l'Allemagne y a participé pour plus de 70% des importations totales. La plus grande partie de ce commerce se fait entre pays européens.

5. Les plus importants importateurs d'asperges expédiées par air sont le Royaume-Uni et l'Italie, les importations du Royaume-Uni sont en moyenne de près de 200 tonnes par an, alors que les importations en Italie, qui étaient en moyenne de près de 120 tonnes au début de 1970, sont montées à 315 tonnes en 1973. En Belgique, au Danemark, aux Pays-Bas, en Suisse et en Suède, les importations provenant de fournisseurs non européens (c'est-à-dire d'asperges expédiées par air) sont en moyenne inférieures à 10 tonnes par an.

6. La plus grande partie du commerce d'importation des asperges se situe entre avril et juin, étant donné que c'est l'époque où la production européenne est à son maximum. Très peu d'asperges sont importées pendant le reste de l'année car, à l'exception du Royaume-Uni et de l'Italie, la demande est minimale et les asperges importées sont très chères.

7. En Europe continentale, les asperges se vendent largement par l'intermédiaire des magasins de détail et elles sont utilisées également dans l'industrie alimentaire. Toutefois, dans le Royaume-Uni, même lorsque la production d'asperges du pays atteint un maximum, elles se vendent principalement pour le ravitaillement des restaurants et aux magasins de détail de luxe. Dans tous les pays, les asperges transportées par air sont destinées principalement aux restaurants avec des fournitures occasionnelles aux magasins de détail de luxe.

8. Les prix cif moyen sont cités pour les asperges à partir de diverses sources pour les années 1969-1973. En général, les prix d'importation avaient tendance à varier et dans la plupart des pays aucune tendance n'est discernable. Les asperges transportées par air atteignent habituellement deux à trois fois les prix payés pour les asperges cultivées en Europe.

9. On ne dispose d'une série de prix de gros que pour le Royaume-Uni. Les prix sont les plus bas en mai/juin, lorsque la production du pays et européenne est sur le marché et ils sont les plus élevés pendant les mois d'hiver, bien que les prix varient au cours de ces mois suivant la source et la qualité.

10. Une comparaison des prix entre pays pour les asperges expédiées par air révèle que les prix sont particulièrement bas en Suède et élevés dans le Royaume-Uni, en France et en Allemagne.

11. Les exigences de qualité sont discutées. Dans le Royaume-Uni, la préférence va aux asperges vertes, alors que sur le Continent, les asperges blanches sont préférées. Les asperges doivent être récoltées lorsque les écailles des bourgeons sont serrées et elles doivent être refroidies rapidement pour éliminer la chaleur du terrain. Elles doivent être de préférence rassemblées en bottes pesant 1 kg ou ½ kg et expédiées par air vers l'Europe dans des emballages pyramidaux en fibre ou en bois ou bien dans des cartons en fibre en une seule couche.

12. Tous les fournisseurs d'asperges à la CEE élargie doivent se conformer à la norme de la CEE qui est exposée dans l'Annexe B. Cette norme donne les exigences minimales pour l'aspect extérieur pour toutes les classes d'asperges, par exemple, forme, taille, couleur, etc.

13. Les obstacles au commerce sous la forme de tarifs douaniers et de règlements phyto-sanitaires sont examinés. Les tarifs douaniers du Royaume-Uni et du Danemark s'aligneront sur le tarif douanier de la CEE de 16% au 1er janvier 1978. La Suisse et la Suède ont des tarifs douaniers spéciaux – les détails des tarifs douaniers sont donnés page 27. L'Allemagne a des règlements sur les taux admissibles de résidus chimiques, que s'appliquent aux produits frais, y compris les asperges.

14. Les incidences des modifications des tarifs douaniers sur le marché du Royaume-Uni à la suite de son entrée dans la CEE sont examinées. On conclut que les membres de la CEE auront des perspectives améliorées et que les pays du Commonwealth feront face à une grande concurrence que jusqu'à présent.

15. Les perspectives pour un nouveau fournisseur sont examinées. En général, il y a absence de demande en Europe Continentale pour les asperges transportées par air pour les raisons suivantes: (a) peu de gens sont prêts à payer le prix fort pour des asperges transportées par air et (b) les asperges en conserves représentent un produit de remplacement bon marché et acceptable. Bien qu'il y ait un marché relativement important en Italie, les Etats-Unis prédominent à tel point qu'il semble y avoir peu de place pour un autre fournisseur. Le Royaume-Uni semble être le seul marché offrant beaucoup d'espoir à un nouveau fournisseur éventuel, en particulier dans la période de septembre à décembre, mais il faut souligner qu'un prix élevé ne sera obtenu sur ce marché que si les asperges sont de haute qualité.

RESUMEN Y CONCLUSIONES

El mercado de espárragos en determinados Países de Europa Occidental

1. El espárrago es una planta originaria de las regiones templadas, pero puede cultivarse con éxito en áreas subtropicales. Como es un producto hortícola altamente perecedero, las áreas elegidas para la producción deben contar con buenas facilidades de transporte, y tener en cuenta que las exportaciones a Europa desde países de otros continentes deben realizarse por vía aérea.
2. Se discute la producción en Europa. Con excepción de Alemania y Suiza, la mayoría de los países tienen una capacidad de producción suficiente para satisfacer la demanda interior, por lo que las importaciones son corrientemente bastante bajas.
3. El principal suministrador de espárragos, por vía aérea a Europa, son los Estados Unidos, incluyéndose como otros países suministradores Méjico, Tunísia, Marruecos, Sud Africa, Perú, Kenya y Nueva Zealanda. Se revisa, brevemente, la producción en los Estados Unidos y Méjico.
4. El total de las importaciones en Europa Occidental se sitúa entre 14.012 y 16.483 toneladas – ver Tabla 1; anotándose Alemania más del 70% del total de las importaciones. El volumen principal de este comercio se realiza entre los propios países europeos.
5. Los principales importadores de espárragos, por vía aérea, son el Reino Unido e Italia; las importaciones del Reino Unido suponen una cifra media anual de 200 toneladas, mientras que las importaciones de Italia, que suponían una cifra media anual de 120 toneladas a principios de los años 70, se elevaron, en 1973, a 315 toneladas. En Bélgica, Dinamarca, Holanda, Suiza, y Suecia, las importaciones procedentes de países no europeos, es decir las realizadas por vía aérea se elevan a una cifra media inferior a 10 toneladas anuales.
6. La mayor parte de las importaciones de espárragos tienen lugar entre Abril y Junio, época en que la producción europea se encuentra en su punto culminante. En el resto del año, las importaciones europeas, con excepción de las del Reino Unido e Italia, son muy pequeñas, ya que, en esta época, la demanda es mínima y los espárragos importados son muy caros.
7. En Europa continental los espárragos se venden en gran proporción a través de establecimientos de venta al por menor, siendo utilizados ampliamente también por el comercio de abastecimiento. Sin embargo, en el Reino Unido, incluso cuando la producción interna se encuentra en su punto culminante, los espárragos se venden principalmente al comercio de abastecimiento y a los establecimientos du lujo de venta al por menor. En todos los países, los espárragos importados por vía aérea se destinan principalmente al comercio de abastecimiento, con suministros ocasionales a los establecimientos de venta al por menor de lujo.

8. Se dan precios CIF medios de diversas fuentes suministradoras en los años 1969-1973. En general, los precios de importación han tendido a fluctuar y en la mayoría de los países no se puede observar una tendencia clara. Los espárragos importados por vía aérea alcanzan dos o tres veces el precio de los espárragos cultivados en Europa.

9. Solo se disponen de cifras de precios del comercio al por mayor del Reino Unido. Los precios más bajos son los de Mayo/Junio cuando la producción interior y europea está en el mercado, y los más altos en los meses de invierno, aunque los precios varían, dentro de un mes dado, de acuerdo con su procedencia y su calidad.

10. Comparando los precios de los espárragos importados por vía aérea, en los distintos países europeos, se comprueba que los precios son particularmente bajos en Suecia y altos en el Reino Unido, Francia y Alemania.

11. Se discuten las exigencias de calidad. En el Reino Unido las preferencias se dirigen hacia los espárragos verdes, mientras que en el Continente prefieren los espárragos blancos. Los espárragos deben recolectarse cuando las puntas están compactas, y deben refrigerarse rápidamente para remover el calor del campo. Es conveniente embalarlos en manojo de 1 ó $\frac{1}{2}$ kg de peso y enviarlos por vía aérea a Europa en contenedores piramidales de tablero de fibra o madera, o en cajas de tablero de fibra de una sola capa.

12. Todos los suministradores de espárragos a la CEE ampliada deben cumplir las normas de la CEE, que se incluyen en el Apéndice B. Estas normas fijan las exigencias mínimas de aspecto externo para todas las clases de espárragos, tales como forma, tamaño, coloración etc.

13. Se examinan las barreras aduaneras comerciales en forma de tarifas y de regulaciones fitosanitarias. Las tarifas del Reino Unido y Dinamarca se alinearán con las tarifas de la CEE del 16% en el primero de Enero de 1978. Suiza y Suecia tienen tarifas específicas — se incluyen datos detallados de tarifas en la página 27. Alemania tiene regulaciones aplicables a los productos frescos, incluidos los espárragos, sobre los niveles permitidos de residuos de productos químicos.

14. Se consideran las implicaciones de los cambios de tarifas, en el mercado del Reino Unido, consiguientes a la entrada en la CEE. Se llega a la conclusión de que los países miembros de la CEE tendrán mejores perspectivas, y que los países de la Commonwealth se enfrentarán con una competencia mayor que hasta ahora.

15. Se consideran las perspectivas para nuevos suministradores. En general, en Europa continental existe escasa demanda para los espárragos importados por vía aérea porque (a) pocas personas están dispuestas a pagar su precio elevado y (b) los espárragos enlatados constituyen un sustitutivo barato y aceptable. Aunque existe un mercado relativamente importante en Italia, los Estados Unidos lo dominan de tal forma que existen pocas posibilidades para otros suministradores. El Reino Unido parece ser el único mercado que ofrece más posibilidades para nuevos suministradores, en particular en el período Septiembre-Diciembre, pero debe tenerse muy en cuenta que solamente se puede alcanzar un alto precio en este mercado si los espárragos son de alta calidad.

Introduction

Asparagus is indigenous to temperate regions although it can be grown quite successfully in subtropical areas provided it is given a rest period, brought about by low temperatures or a period of no rain. If the plant does not have a rest period the shoots may become less vigorous and more spindly each year.

Besides their agricultural suitability, areas chosen for asparagus production, especially export production, should have good transport facilities as this vegetable damages easily. Because of the high perishability of this crop, supplies from non-European countries must be air-freighted in and this makes out-of-season asparagus an expensive commodity with a limited demand. As demand in Europe is so limited it is probably not economic for a country to start up asparagus production solely for export to Europe; ideally there should either also be a local demand for fresh and canned asparagus or a nearby export market. However, there may be a case for growing small quantities for export to Europe as an additional crop within an established export orientated horticultural industry.

Production

IN EUROPE

Asparagus is grown out-of-doors during the summer in all the European countries surveyed in this report. The production season starts in late March/early April in the south of Europe and becomes progressively later as latitudes increase – for example in the UK the production period is mid-May to the end of June.

Of the countries whose markets are under consideration, France is the largest producer of asparagus, producing around 60 000 tonnes per annum. It is harvested in May/June but some is also forced under glass to supply the French domestic market in the early months of the year. France exports over 10 500 tonnes of asparagus each year, mainly to Germany but also to Switzerland. France is virtually self-sufficient in asparagus production and so imports only very small quantities.

Italian asparagus production is thought to average around 45 000 tonnes per annum. Production is concentrated in the north of the country, both green and white varieties being grown, although white asparagus is more dominant on this market (see Part III for further details of colour preferences). Despite this large domestic production, Italy has built up a relatively large import trade in air-freighted asparagus.

In Germany production averages only around 12 000 tonnes; this is not much for a country of her population and is the main reason why German imports are so much larger than for the other countries considered in this report.

Production in the Netherlands averages about 8 000 tonnes per annum and exports average around 3 500 tonnes per annum. Domestic production is adequate to meet home demand and little is imported into the Netherlands.

Production of asparagus in Belgium is of the order of 1 000 tonnes per annum, thus imports are relatively large, averaging over 500 tonnes per annum.

Production in the UK varies between 500 and 700 tonnes and, including imports, there is only around 1 000 tonnes available for domestic consumption. Therefore asparagus is very much a luxury item in the UK, even when domestic production is at a peak.

IN NON-EUROPEAN SUPPLYING COUNTRIES

The USA, Mexico, South Africa, Tunisia, Morocco, New Zealand, Peru and Kenya all supply air-freighted asparagus to Europe. Apart from the USA and Mexico, little has been published concerning production, production methods or future export plans of these overseas suppliers.

In the USA asparagus production is around 130 000 tonnes per annum, although it is declining slightly. Of this total approximately 70% is canned, the remainder is either consumed fresh or exported fresh. Over a third of the production of asparagus takes place in the state of California.

In Mexico production of asparagus rose rapidly between 1969 and 1973, increasing from over 2 000 tonnes to over 10 000 tonnes. Just under half the domestic production is canned, and between 2 000 and 3 000 tonnes of asparagus is exported fresh. Exports of canned asparagus have risen from around 550 tonnes in 1969 to over 3 500 tonnes in 1973.

There is no doubt that countries such as the USA, Mexico, South Africa and New Zealand could, if demand and prices were sufficiently encouraging, export far more than at present because exports of fresh asparagus to Europe comprise only a small proportion of current production.

The market situation in Western Europe

GENERAL

Table 1 below shows imports of asparagus into the nine countries under review during the years 1969–1973 compared with an average for the years 1964–1968. Imports showed an upward trend during the earlier years, reaching a peak in 1970 of 16 483 tonnes: since then they have ranged between 15 500 and 16 000 tonnes per year.

Table 1

Imports of asparagus into selected Western European countries

| | 1964/68 Average | 1969 | 1970 | 1971 | 1972 | 1973 | tonnes |
|-----------------------------|--------------------|--------|--------|--------|--------|--------|--------|
| Federal Republic of Germany | 8 764 | 10 605 | 12 912 | 12 158 | 12 082 | 11 616 | |
| Belgium/Luxembourg | 610 | 492 | 568 | 467 | 549 | 526 | |
| United Kingdom | ... | (204) | 259 | 334 | 387 | 386 | |
| Italy | 16 | 38 | 113 | 129 | 135 | 317 | |
| Denmark | 445 | 376 | 351 | 101 | 88 | 104 | |
| France | 42 | 41 | 31 | 73 | 39 | 135 | |
| Netherlands | 41 | 19 | 7 | 5 | 10 | 14 | |
| Switzerland | 1 905 | 2 197 | 2 191 | 2 577 | 2 340 | 2 552 | |
| Sweden | 28 | 40 | 51 | 23 | 13 | 29 | |
| Total | 11 851 | 14 012 | 16 483 | 15 867 | 15 643 | 15 679 | |

Notes: ... not available () TPI estimate

Source: derived from official trade returns

Germany is the major market and accounts for over 70% of total imports; the changes in the total are largely a reflection of the fluctuation in German imports. Switzerland is the second largest market, accounting for around 15% of total imports. Denmark and the Netherlands have experienced a decline in quantities imported whilst Italian imports have risen considerably. Over 95% of this trade is intra-European and imports fluctuate annually depending on the state of the harvest.

Table 2 shows that compared with the total import market, the market for air-freighted asparagus is very small.

With the exception of the UK and Italy, very little air-freighted asparagus is imported into Europe. In Belgium, the Netherlands, Switzerland, Denmark and Sweden, imports average under 10 tonnes per annum. In Germany and France the figure is slightly larger and in France imports of air-freighted asparagus account for over 25% of total imports. Virtually all Italian supplies are air-freighted in; this market has shown considerable expansion over the years. In the United Kingdom well over 50% of imports come by air.

Table 2

Imports of air-freighted¹ asparagus into selected Western European countries

tonnes

| | 1969 | 1970 | 1971 | 1972 | 1973 |
|-----------------------------|-------|------|------|------|------|
| Federal Republic of Germany | 12 | 22 | 20 | 14 | 20 |
| Belgium/Luxembourg | 3 | 4 | 5 | 2 | 1 |
| United Kingdom | (136) | 182 | 194 | 266 | 225 |
| Italy | 38 | 113 | 128 | 135 | 315 |
| Denmark | 4 | 11 | 6 | 8 | 4 |
| France | 10 | 24 | 19 | 23 | 51 |
| Netherlands | — | — | 1 | 1 | 2 |
| Switzerland | 1 | 7 | 6 | 4 | 3 |
| Sweden | 6 | 2 | — | — | 3 |

Notes: ¹ Assessed by aggregating supplies from non-European sources.

— nil or negligible () USA exports

Source: Official Trade Returns and Nimex Statistics (Analytical Tables. Vol. A. Chapters 1–24. Statistical Office of the European Communities).

FEDERAL REPUBLIC OF GERMANY

Annual imports

Table 3 shows that imports have fluctuated over the period, rising to a peak of 12 912 tonnes in 1970. Since then they have shown a slight decline to 11 616 tonnes in 1973.

Table 3

Imports of asparagus into the Federal Republic of Germany

| | 1964/68 Average | 1969 | 1970 | 1971 | 1972 | 1973 |
|--------------------|--------------------|-----------------|------------------|------------------|------------------|------------------|
| Total | tonnes '000 DM | 8 764 29 042 | 10 605 43 050 | 12 912 52 019 | 12 158 54 500 | 12 082 56 732 |
| of which from: | | | | | | |
| Belgium/Luxembourg | tonnes '000 DM | 226 439 | ... 31 | 8 91 | 14 305 | 31 161 |
| France | tonnes '000 DM | 3 650 11 900 | 5 893 25 496 | 7 840 32 845 | 8 165 37 206 | 8 251 36 902 |
| Italy | tonnes '000 DM | 4 14 | 60 200 | 97 349 | 72 248 | 32 135 |
| Netherlands | tonnes '000 DM | 4 500 15 512 | 4 179 16 281 | 4 593 17 785 | 3 409 15 974 | 3 305 18 191 |
| Spain | tonnes '000 DM | 63 130 | ... ... | 17 50 | ... ... | 8 34 |
| Hungary | tonnes '000 DM | 298 653 | 430 906 | 300 762 | 457 825 | 412 1 032 |
| Tunisia | tonnes '000 DM | 3 20 | — — | 14 54 | 15 52 | 13 50 |
| Poland | tonnes '000 DM | 8 25 | 14 37 | 33 87 | 13 34 | 12 42 |
| Peru | tonnes '000 DM | — 4 | 6 43 | 7 43 | 5 33 | — — |
| Other countries | tonnes '000 DM | 12 46 | 23 87 | 3 13 | 8 37 | 9 41 |
| | | | | | | 28* |
| | | | | | | 145 |

Notes: — Nil or Negligible

... Not available

*of which South Africa 15 tonnes, value 90 000 DM

Source: Der Aussenhandel Statistisches Bundesamt

France and the Netherlands are the main suppliers and together accounted for over 90% of the total, 1969–73. Imports from France showed a rising trend up to 1972 but in 1973 they fell slightly to 7,954 tonnes, 68% of the total. Imports from the Netherlands showed a downward trend over the period falling to 3,084 tonnes in 1973, 27% of the total. Supplies from Hungary average around 400 tonnes per annum; other European suppliers include Belgium, Italy, Spain and Poland.

Imports of air-freighted supplies have ranged from 9 to 22 tonnes, with Tunisia the main supplier. Other less regular suppliers include Morocco, South Africa, Peru and the USA.

Seasonality of supply

Over 95% of German imports arrive between April and June, May being the peak month with over 50% of imports. Small quantities are received in March and July, imports are negligible in August but increase slightly in September/October and average around 5 tonnes a month up to Christmas. In January and February imports are very small. France sends supplies from March to July; Dutch supplies come on the market slightly later than French. Other European supplies also arrive between April and July. Supplies from countries outside Europe arrive either in the Autumn or in March.

Distribution

Asparagus is widely consumed in Germany during the European production season, being traded in the country's wholesale markets and sold through many retail outlets. Most air-freighted asparagus probably goes to the restaurant and hotel trade.

Prices

Average annual cif prices during the years 1969–1973 were as follows:—

Table 4

Average cif prices of asparagus imported into the Federal Republic of Germany

| | 1969 | 1970 | 1971 | 1972 | 1973 |
|-------------|------|------|------|------|------|
| All source | 4.06 | 4.03 | 4.48 | 4.70 | 4.30 |
| France | 4.33 | 4.19 | 4.56 | 4.47 | 4.36 |
| Netherlands | 3.90 | 3.87 | 4.69 | 5.50 | 4.50 |
| Hungary | 2.11 | 2.54 | 1.81 | 2.50 | 1.92 |
| Tunisia | — | 3.86 | 3.47 | 3.85 | — |
| Peru | 7.13 | 6.14 | 6.60 | — | — |

— no price quoted.

Source: derived from official trade returns.

The all source price rose to a peak of 4.70 DM/kg in 1972 largely due to an increase in the value of Dutch supplies, but then fell in 1973 to 4.30 DM/kg. Prices for French asparagus fluctuated between 4.19 DM/kg and 4.56 DM/kg, but those for Dutch asparagus rose greatly in 1971 and again in 1972 and in the last three years Dutch asparagus fetched more at import level than French. Prices for Hungarian asparagus are much lower than for other suppliers, which is probably a reflection of the poorer quality of this asparagus, and show no particular trend. Asparagus from Tunisia, although air-freighted in, did not fetch a high price; this might again reflect its quality. Asparagus from places as far away as Peru and South Africa averages around 6.00 DM/kg; although a large proportion of the differential can be accounted for by the costs of air-freight, the asparagus is also probably of high quality.

BELGIUM/LUXEMBOURG

Annual imports

As can be seen from Table 5 imports showed no distinct trend between 1969 and 1973, fluctuating between a low of 467 and a high of 568 tonnes.

This table shows that in recent years France has taken over from the Netherlands as the leading supplier. Imports from France almost doubled between 1969 and

Table 5

Imports of asparagus into Belgium/Luxembourg.

| | | 1964/68 Average | 1969 | 1970 | 1971 | 1972 | 1973 |
|-----------------|---------------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Total | tonnes '000 B.Fr | 610 16 627 | 492 14 499 | 568 22 921 | 467 16 796 | 549 24 804 | 526 26 083 |
| of which from:- | | | | | | | |
| France | tonnes '000 B.Fr | 49 2 541 | 162 6 016 | 304 12 330 | 291 12 114 | 335 16 986 | 310 18 684 |
| Netherlands | tonnes '000 B.Fr | 533 13 287 | 323 7 965 | 258 9 934 | ... ... | 212 7 639 | ... ... |
| Peru | tonnes '000 B.Fr | - - | ... ... | 2 267 | 2 261 | ... ... | ... ... |
| Other Countries | tonnes '000 B.Fr | 27 799 | 7 518 | 4 390 | 174 4 421 | 2 179 | 216 7 399 |

Notes: — Nil or Negligible

... Not available

Source: *Commerce Extérieur. L'Institut National de Statistique.*

1970 and since then have averaged around 300 tonnes per annum. Although no figures are given for the Netherlands in the Official Trade Returns in 1971 and 1973, according to the Nimexe statistics almost all imports described as coming from 'other countries' did in fact come from the Netherlands. Her supplies have shown a downward trend over the years, averaging just over 200 tonnes in 1972/73.

Peru, Tunisia, Morocco and New Zealand have all sent air-freighted asparagus to Belgium but total supplies from these sources average under 5 tonnes per annum and none of these suppliers has yet built up a regular air-freight trade.

Seasonality of supply

Asparagus imports reach a peak in May and June, with over 90% of total imports arriving in the three months April to June. Between July and February imports are under 10 tonnes a month. The Netherlands supplies this market mainly in May and June whereas the majority of French exports arrive between March and the end of June; very small quantities are also imported from France in October and November.

Distribution

Asparagus is widely consumed domestically during the European production season and both domestic and imported supplies are marketed on the country's wholesale markets. The very limited out-of-season supplies are sold mainly to the restaurant trade.

Prices

Average annual cif prices for imported asparagus during the years 1969–1973 were as follows:

Table 6

Average cif prices of asparagus imported into Belgium/Luxembourg

| | | | | B.Fr/kg |
|-------------|-------|--------|--------|---------|
| | 1969 | 1970 | 1971 | 1972 |
| All source | 29.47 | 40.35 | 35.97 | 45.18 |
| France | 37.14 | 40.56 | 41.53 | 50.70 |
| Netherlands | 24.66 | 38.50 | — | 36.03 |
| Peru | — | 133.50 | 130.50 | — |

— no price quoted

Source: derived from official trade returns

The all source price has, apart from 1971, shown a rising trend, reaching 49.59 Fr/kg in 1973. Prices for French asparagus have shown a steady upward trend and fetch considerably more than Dutch asparagus. For the two years that prices were available from Peru, it can be seen they were treble the all source price and it is not surprising that there is only a very small demand for this air-freighted asparagus.

UNITED KINGDOM

Annual imports

Prior to 1970 asparagus was not shown separately in the UK Trade Returns so Table 7 shows imports from 1970 onwards. The provisional 1974 figure is 337 tonnes and imports appear to have stabilised at around the level of 330–390 tonnes. Considering the low level of domestic production and the size of population, the UK imports surprisingly low amounts of asparagus. This bears out the fact that asparagus is considered very much a 'luxury' item in the UK and is not bought by most housewives. However, unlike most other European countries, the 'luxury image' of asparagus has worked to the advantage of overseas suppliers and the UK is a large market for air-freighted asparagus.

Table 7

Imports of asparagus into the United Kingdom

| | | 1970 | 1971 | 1972 | 1973 |
|--------------------------|--------|------|------|------|------|
| 16 April – 30 June | tonnes | 132 | 203 | 185 | 229 |
| | £'000 | 80 | 122 | 125 | 183 |
| 1 July – 15 April | tonnes | 127 | 131 | 202 | 157 |
| | £'000 | 109 | 120 | 179 | 228 |
| Total | tonnes | 259 | 334 | 387 | 386 |
| | £'000 | 189 | 242 | 304 | 411 |
| of which from: | | | | | |
| France | tonnes | 53 | 107 | 99 | 55 |
| | £'000 | 28 | 48 | 52 | 32 |
| Italy | tonnes | 21 | 32 | 16 | 80 |
| | £'000 | 8 | 18 | 9 | 44 |
| Hungary | tonnes | — | — | 6 | 26 |
| | £'000 | — | — | 6 | 26 |
| Republic of South Africa | tonnes | — | 2 | 13 | 27 |
| | £'000 | — | 3 | 15 | 31 |
| Tunisia | tonnes | 3 | 6 | 7 | 8 |
| | £'000 | 2 | 5 | 6 | 9 |
| USA | tonnes | 141 | 143 | 169 | 141 |
| | £'000 | 110 | 126 | 154 | 220 |
| Kenya | tonnes | 5 | 6 | 5 | 8 |
| | £'000 | 4 | 5 | 3 | 6 |
| New Zealand | tonnes | 7 | 6 | 6 | 5 |
| | £'000 | 11 | 8 | 6 | 8 |
| Mexico | tonnes | 15 | 22 | 32 | 15 |
| | £'000 | 16 | 22 | 28 | 18 |
| Australia | tonnes | 1 | 5 | 2 | 3 |
| | £'000 | 1 | 5 | 2 | 2 |
| Canada | tonnes | 6 | — | 18 | — |
| | £'000 | 4 | — | 12 | — |
| Cyprus | tonnes | 2 | 3 | 9 | 15 |
| | £'000 | 1 | 2 | 6 | 8 |
| Other Countries | tonnes | 5 | 2 | 5 | 3 |
| | £'000 | 4 | — | 5 | 7 |

— nil or negligible

Source: *The Trade of the United Kingdom*. H.M. Customs and Excise.

The USA is the main supplier to this market and, with the exception of 1972 when the figure rose to 169 tonnes, sends around 140 tonnes per annum. All these supplies are air-freighted. France is the next largest supplier, sending between 50 and 110 tonnes per annum over the period. Italy and Hungary are

other European suppliers; imports from Italy were particularly high in 1973, reaching 80 tonnes. Non-European suppliers account for an important part of the UK's market and in 1972 and 1973 they accounted for over 50% of total imports. The United Kingdom is, apart from Italy, the largest European importer of air-freighted asparagus, and besides the USA supplies have been received from Mexico, South Africa, Tunisia, Kenya, New Zealand and Cyprus. The market for air-freighted asparagus is not dynamic and is dominated by the USA, but there is plenty of opportunity for new suppliers to oust some of the smaller suppliers.

Seasonality of supply

Most imports arrive from March to June, often with a peak in March. Although UK production is on the market from mid-May to the end of June, European grown asparagus can still compete successfully as prices are high on the domestic market. Most European produce is imported between mid-April and the end of June. Some non-European suppliers, notably the USA, also send at this time of year, but most air-freighted supplies arrive between the end of July and mid-April, and particularly between January and April. Supplies are short from September to December. Table 9 gives a good indication of the seasonality of supplying countries.

Distribution

Asparagus, whether home produced or imported, is marketed through city wholesale firms, but the bulk of the air-freighted produce is marketed in the New Covent Garden Market. Some asparagus from the USA/Mexico is bought on a firm basis, the price being fixed daily, but other asparagus is sold on a consignment/commission basis. As fresh asparagus is considered a luxury item in the United Kingdom, even when domestic production is at a peak, the main outlets are luxury hotels, restaurants and high class fruiterers.

Prices

Average annual cif prices for asparagus during the years 1970–1973 were as follows:

Table 8

Average cif prices of asparagus imported into the United Kingdom

| | 1970 | 1971 | 1972 | 1973 | p/kg |
|-------------------------------|------|------|------|------|------|
| All source 16 April – 30 June | 61 | 60 | 67 | 80 | |
| 1 July – 15 April | 86 | 92 | 89 | 145 | |
| France | 53 | 45 | 53 | 58 | |
| Italy | 38 | 56 | 57 | 55 | |
| USA | 78 | 88 | 91 | 156 | |
| Mexico | 107 | 100 | 86 | 118 | |
| New Zealand | 154 | 127 | 108 | 154 | |

Source: derived from official trade returns

In the UK the winter or out-of-season price is considerably higher than the in-season price. Both series showed little movement up to 1973 but in that year prices rose considerably, probably due to the poor performance of Sterling in the world market. Asparagus from European countries fetches under 60p/kg and has shown little increase, whereas air-freighted asparagus fetches upwards of 80p/kg and as much as over 150p/kg at times. Asparagus from New Zealand fetches the top price in most years as New Zealand suppliers stop sending when the market falls below a predetermined level which is necessarily high to cover the high air-freight charges.

Table 9 shows the average monthly wholesale price for asparagus. Prices are lowest April to June when first European supplies and then domestic production

Table 9

Monthly average wholesale prices at selected markets in England and Wales

| | J | F | M | A | M | J | J | A | S | O | N | D | Min. | Max. | Annual Range |
|--------------|--------|--------|--------|-----|-------|-----|-------|----|-----|-----|-------|-------|--------|------|--------------|
| Kenya | 66(a) | — | 45 | — | — | — | — | — | — | — | — | — | 73½ | 45 | 73½ |
| 1972 | 66½ | 56½(a) | 42½(b) | — | — | — | — | — | — | — | — | — | 100(a) | 52½ | 100 |
| 1973 | 63½ | 60(b) | 50(a) | — | — | — | — | — | — | — | — | — | 50(a) | 50 | 69 |
| 1974 | 69 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| USA | 70(a) | 70 | 54½ | 42½ | 40½ | 42 | — | 55 | 59 | — | 54 | — | 40½ | — | 70 |
| 1972 | 70 | 66 | 55½ | 49½ | 40(a) | — | — | — | — | — | — | — | — | — | — |
| 1973 | 90(b) | 78 | 72 | 59½ | 56 | — | 65(a) | — | 81½ | 67½ | 60(b) | 60(b) | — | — | 90 |
| 1974 | 100(b) | 89 | — | — | — | 29½ | 30½ | 32 | 28 | — | — | — | — | — | 100 |
| France | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 32 |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hungary | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Italy | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Tunisia | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Cyprus | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| UK | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mexico | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| South Africa | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| New Zealand | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Australia | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1972 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1973 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1974 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

Notes: — no price quoted.
(a) Price quoted one week in month.

(b) Price quoted twice in a month.

is on the market. Domestically grown asparagus, even when production is at a peak, fetches a higher price than Continental supplies, illustrating the premium paid for the fresher domestic product. As with the import prices, wholesale prices have shown an upward trend over the years but this is a reflection of increased marketing costs rather than of increased demand. Wholesale prices are generally higher in the winter months but vary within given months according to source, New Zealand asparagus fetching top prices. This range in prices according to source is attributed to quality differences (asparagus deteriorates rapidly at high temperatures or in unsuitable packages) and, in addition, premiums are paid for asparagus supplied under well known brand marks which have a long established reputation among buyers.

In the UK the preference is for green asparagus whereas on the Continent white asparagus is preferred.

ITALY

Annual Imports

As can be seen from Table 10, imports have shown a rapid growth over the period, rising to 317 tonnes in 1973. However, this latter figure appears to be exceptional as the provisional 1974 import figure is 194 tonnes. Nevertheless, the Italian market has still shown the most substantial growth rate of all the countries studied.

Table 10

Imports of asparagus into Italy

| | | 1964/68 Average | 1969 | 1970 | 1971 | 1972 | 1973 |
|-----------------|---------------------|--------------------|----------------|------------------|------------------|------------------|------------------|
| Total | tonnes '000 Lire | 16.4 15 917 | 37.8 53 468 | 112.6 119 431 | 128.8 105 795 | 135.2 107 466 | 316.9 360 979 |
| of which from:- | | | | | | | |
| USA | tonnes '000 Lire | 11.0 12 704 | 37.2 53 071 | 110.1 113 996 | 124.0 99 561 | 126.9 99 332 | 314.6 358 937 |
| Tunisia | tonnes '000 Lire | 0.8 300 | 0.4 244 | — | 0.1 58 | — | ... |
| New Zealand | tonnes '000 Lire | — | — | 2.5 5 435 | 3.8 5 724 | 3.9 5 887 | ... |
| Other Countries | tonnes '000 Lire | 4.6 2 913 | 0.2 173 | — | 0.9 452 | 4.4 2 247 | 1.3 2 042 |

Notes: — nil or negligible ... not available

Source: *Comercio Con L'Estero*. Instituto Centrale Di Statistica

The growth of the Italian market is entirely due to increased imports of air-freighted asparagus; such a growth is remarkable as Italy is not usually the main market for such commodities. The USA is the dominant supplier and her supplies set the pattern for the total. New Zealand and other non-European countries also send very small amounts.

Seasonality of supply

Most asparagus arrives in Italy between February and June and there is usually a peak in March/April. Small quantities are occasionally imported in October/November. The import pattern for asparagus from the USA is virtually synonymous with the overall import pattern.

Distribution

Imported air-freighted asparagus arrives at Milan and is sold on the wholesale market, mainly to luxury hotels and restaurants.

Prices

Average annual cif prices for imported asparagus during the years 1969–1973 were as follows:

Table 11

Average cif prices of asparagus imported into Italy

| | Lire Kg | | | | |
|-------------|---------|-------|------|------|-------|
| | 1969 | 1970 | 1971 | 1972 | 1973 |
| All sources | 1 414 | 1 061 | 818 | 795 | 1 143 |
| USA | 1 427 | 1 035 | 803 | 783 | 1 141 |

Source: derived from official trade returns

All source prices fell steadily during the first four years of the period – this is often the case with a new import which is sent in increasing quantities. In 1973 total imports showed a large rise but prices increased markedly also – possibly due to the weakness of the Lira. Prices paid for asparagus from the USA showed an identical trend to that of the all source price.

DENMARK

Annual imports

Table 12 shows that over the years imports have fluctuated greatly but have tended to show a downward trend.

Table 12

Imports of asparagus into Denmark

| | | 1964/68 Average | 1969 | 1970 | 1971 | 1972 | 1973 |
|-------------------|-------------------|--------------------|-------|-------|-------|------|-------|
| 1 May – 15 May | tonnes '000 Kr | ... | ... | ... | 18.5 | 33.2 | 45.8 |
| | | ... | ... | ... | 75 | 132 | 222 |
| 16 May – 30 June | tonnes '000 Kr | ... | ... | ... | 78.4 | 15.9 | 52.5 |
| | | ... | ... | ... | 392 | 55 | 239 |
| 1 July – 30 April | tonnes '000 Kr | ... | ... | ... | 4.4 | 38.7 | 5.5 |
| | | ... | ... | ... | 50 | 207 | 72 |
| Total | tonnes '000 Kr | 445.1 | 375.8 | 350.9 | 101.3 | 87.8 | 103.8 |
| | | 179.9 | 1 615 | 1 280 | 517 | 394 | 533 |
| of which from:- | | | | | | | |
| Netherlands | tonnes '000 Kr | 393.1 | 184.6 | 168.4 | 45.0 | 5.9 | 41.0 |
| | | 1 585 | 852 | 517 | 251 | 16 | 189 |
| Hungary | tonnes '000 Kr | 42.1 | 177.1 | 171.5 | 44.2 | 71.9 | 50.0 |
| | | 164 | 678 | 683 | 176 | 285 | 219 |
| Italy | tonnes '000 Kr | 1.2 | 8.9 | — | 6.3 | 1.2 | 7.4 |
| | | 7 | 39 | — | 27 | 8 | 49 |
| Tunisia | tonnes '000 Kr | 0.7 | 0.4 | 2.0 | 2.3 | 1.3 | 0.7 |
| | | 4 | 7 | 18 | 29 | 16 | 10 |
| USA | tonnes '000 Kr | 0.2 | 2.6 | 8.6 | 3.4 | 4.9 | 3.6 |
| | | — | 24 | 57 | 33 | 52 | 51 |
| Other Countries | tonnes '000 Kr | 7.8 | 2.2 | 0.4 | 0.1 | 2.6 | 1.1 |
| | | 39 | 15 | 5 | 1 | 17 | 15 |

Notes: — Nil or Negligible ... Not available

Source: *Foreign Trade of Denmark*. Det Statistiske Departement

Imports were fairly high prior to 1971 but since then they have averaged only around 100 tonnes. The Netherlands and Hungary are the main suppliers to Denmark and between them account for over 90% of total imports. Italy is a minor European supplier.

Tunisia and the USA are the main suppliers of air-freighted asparagus and both countries appear to have built up a regular, if somewhat fluctuating, trade.

Seasonality of supply

Most imports arrive between the beginning of May and the end of June; imports arriving during the first two weeks in May are showing an increase. Little asparagus arrives between the end of July and mid-April; a high 1972 figure for this period was caused by large imports from Hungary in late April. European supplies arrive between May and July whereas most air-freighted supplies arrive between January and May.

Prices

Average annual cif prices for the years 1969–1973 are shown in Table 13.

Table 13

Average cif prices of asparagus imported into Denmark

| | Kr/Kg | | | | |
|-------------------|-------|------|-------|-------|-------|
| | 1969 | 1970 | 1971 | 1972 | 1973 |
| 1 May – 15 May | — | — | 4.05 | 3.98 | 4.85 |
| 16 May – 30 June | — | — | 5.00 | 3.46 | 4.55 |
| 1 July – 30 April | — | — | 11.36 | 5.35 | 13.09 |
| Netherlands | 4.62 | 3.07 | 5.58 | 2.71 | 4.61 |
| Hungary | 3.83 | 3.98 | 3.98 | 3.96 | 4.38 |
| Tunisia | 17.50 | 9.00 | 12.61 | 12.31 | 14.29 |
| USA | 9.23 | 6.63 | 9.71 | 10.61 | 14.12 |

— No price quoted

Source: derived from official trade returns

This table clearly shows that high prices are paid for air-freighted asparagus. Prices in May and June fluctuate, not showing any particular trend, while prices for the rest of the year are more than double. (The low figure for 1972 was caused by large imports from Hungary in April and is atypical).

Prices for asparagus from the Netherlands showed considerable fluctuation, ranging between 2.71 and 5.58 Kr/kg. Apart from 1973, when the price rose, asparagus from Hungary has fetched a fairly constant price of just under 4.00 Kr/kg. Prices for Tunisian asparagus have fluctuated but in general are higher than prices for asparagus from the USA. Air-freighted asparagus fetches on average over 10 Kr/kg in Denmark.

FRANCE

Annual Imports

Imports into France have fluctuated over the period and no particular trend is evident. France is virtually self-sufficient in asparagus production and as can be seen from Table 14 imports are at a low level.

Unfortunately the Trade Returns do not give a detailed breakdown by supplying country, but the Nimexe Statistics do give such a breakdown. They show that Tunisia has been a regular supplier throughout the 5 years, averaging 14 tonnes per annum. Imports from Italy and other European suppliers fluctuate greatly and in 1973 there was an influx of supplies from Spain, Belgium and Italy.

Table 14

Imports of asparagus into France

| | | 1964/68 Average | 1969 | 1970 | 1971 | 1972 | 1973 |
|-----------------|-------------------|--------------------|-----------|-----------|-----------|-----------|------------|
| Total | tonnes '000 Fr | 42 103 | 41 133 | 31 156 | 73 221 | 39 257 | 135 764 |
| of which from:- | | | | | | | |
| Tunisia | tonnes '000 Fr | 16 41 | ... | 24 122 | 14 64 | ... | ... |
| Italy | tonnes '000 Fr | ... | ... | ... | 50 81 | ... | ... |
| Morocco | tonnes '000 Fr | ... | ... | ... | ... | 14 130 | 20 319 |
| Other Countries | tonnes '000 Fr | 26 62 | 41 133 | 7 34 | 9 76 | 25 127 | 115 445 |

... not available

Sources: *Commerce Extérieur*. Direction Générale des Douanes et Droits Indirects

Imports of air-freighted asparagus varied between 10 and 24 tonnes, 1969–1972, but rose to 51 tonnes in 1973. Tunisia, Morocco latterly, and the USA all send air-freighted asparagus to France.

Seasonality of supply

Unfortunately no statistical breakdown of imports by month is available but it is thought that most imports arrive before April, prior to domestic production coming on to the market.

Distribution

France is the premier asparagus producing country in Europe and during the domestic season the vegetable is relatively cheap and widely consumed. Both these domestic supplies and the small quantities of imported asparagus are sold in the wholesale markets, the air-freighted asparagus going largely to the restaurant trade.

Prices

As the Trade Returns are not very detailed only a restricted price analysis can be given and this is shown in Table 15.

Table 15

Average cif prices of asparagus imported into France

| | 1969 | 1970 | 1971 | 1972 | 1973 | Fr/kg |
|------------|------|------|------|------|-------|-------|
| All source | 3.24 | 5.03 | 3.03 | 6.59 | 5.66 | |
| Tunisia | — | 5.08 | 4.57 | — | — | |
| Morocco | | | — | 9.29 | 15.95 | |

- no price quoted

Source: derived from official trade returns

All source prices have shown considerable fluctuation, ranging from 3.03 Fr/kg to 6.59 Fr/kg.

NETHERLANDS

Annual imports

Demand is met almost wholly by domestic production and, as Table 16 shows, imports are very low, averaging over 11 tonnes per annum, 1969–1973.

Table 16

Imports of asparagus into the Netherlands

| | | 1964/68 Average | 1969 | 1970 | 1971 | 1972 | 1973 |
|--------------------|----------|--------------------|------|------|------|------|------|
| Total | tonnes | 41 | 19 | 7 | 5 | 10 | 14 |
| | '000 Gld | 94 | 36 | 36 | 21 | 39 | 62 |
| of which from: | | | | | | | |
| Belgium/Luxembourg | tonnes | 37 | 8 | 4 | 1 | 2 | 4 |
| | '000 Gld | 81 | 14 | 24 | 5 | 8 | 14 |
| France | tonnes | 1 | 10 | ... | 3 | 5 | 8 |
| | '000 Gld | 4 | 16 | ... | 12 | 27 | 32 |
| Other Countries | tonnes | 3 | 1 | 3 | 1 | 3 | 2 |
| | '000 Gld | 9 | 6 | 12 | 4 | 4 | 16 |

... Not available

Source: *Maandstatistiek van de Invoer* Central Bureau Voor de Statistiek

Belgium and France are the only named suppliers but the Nimexe Statistics show that very small supplies of air-freighted asparagus have been received from Tunisia and South Africa in recent years.

Seasonality of supply

Most imports arrive between April and July: the peak month for imports is either May or June, depending on the earliness or otherwise of the European season.

Distribution

Domestically produced and most imported asparagus is sold on the auction markets.

Prices

Unfortunately, as can be seen from Table 17, the only prices shown in the Official Trade Returns are for European suppliers.

Table 17

Average cif prices of asparagus imported into the Netherlands

| | 1969 | 1970 | 1971 | 1972 | 1973 | Gld/kg |
|--------------------|------|------|------|------|------|--------|
| All sources | 1.89 | 5.14 | 4.20 | 3.90 | 4.42 | |
| Belgium/Luxembourg | 1.75 | 6.00 | 5.00 | 4.00 | 3.50 | |
| France | 1.60 | — | 4.00 | 5.40 | 4.00 | |

— no price quoted

Source: derived from official trade returns

The import price recorded for 1969 was very low compared with preceding and succeeding years. In at least two other countries, Switzerland and Belgium, the 1969 price was low, suggesting unusually good supply in that year. Prices were high in 1970 but since then have fluctuated at a lower level.

SWITZERLAND

Annual imports

Switzerland is the second largest importer of asparagus of the countries under consideration. Table 18 shows that annual imports ranged between 2 191 and 2 577 tonnes, 1969–1973, with a small underlying upward trend.

Table 18

Imports of asparagus into Switzerland

| | | 1964/68 Average | 1969 | 1970 | 1971 | 1972 | 1973 |
|-----------------|--------------------|--------------------|----------------|----------------|----------------|-----------------|-----------------|
| Total | tonnes '000 Fr. | 1 905 6 304 | 2 197 8 513 | 2 191 9 108 | 2 577 9 874 | 2 340 11 459 | 2 552 12 322 |
| of which from: | | | | | | | |
| France | tonnes '000 Fr. | 1 663 5 755 | 1 932 7 822 | 1 959 8 423 | 2 329 9 214 | 2 095 10 695 | 2 370 11 626 |
| Italy | tonnes '000 Fr. | 181 358 | 204 497 | 201 535 | 224 551 | 220 631 | 169 633 |
| Spain | tonnes '000 Fr. | 9 12 | 10 12 | 2 17 | — — | — — | — — |
| Hungary | tonnes '000 Fr. | 44 150 | 45 144 | 22 89 | 15 60 | 19 97 | 9 36 |
| Tunisia | tonnes '000 Fr. | 3 10 | — — | 4 22 | 4 18 | 4 13 | — — |
| United States | tonnes '000 Fr. | — — | 1 15 | 3 21 | — — | — — | 3 24 |
| Other Countries | tonnes '000 Fr. | 5 19 | 5 23 | — 1 | 5 31 | 2 23 | 1 3 |

— nil or negligible

Source: *Statistique de la Suisse* Bureau Federal de Statistique

France is the dominant supplier, accounting for an average of 90% of total imports over the last five years; thus her imports set the pattern for the aggregate. Italy is a minor supplier, averaging between 7 and 9% of the total. Hungary sends very small supplies to Switzerland.

Tunisia and the USA send air-freighted asparagus but so far they have not established a regular pattern of supply. Thus the air-freight trade in Switzerland is small and not well-established.

Seasonality of supply

As in most other countries, virtually all imports arrive between April and June, with May the peak month. Imports during the rest of the year are negligible although small quantities arrive between January and March. France sends between February and July, with a peak in May, and Hungarian supplies also come chiefly in May. Tunisian supplies arrive around April and the USA's around March.

Distribution

In the spring and summer European-grown asparagus is received overland and is sold in the main urban centres, either out of the railway wagons to retailers or secondary wholesalers, or in the wholesale markets. The main outlets for air-freighted out-of-season asparagus are probably luxury hotels and restaurants.

Prices

Average annual cif prices for imported asparagus during the years 1969–1973 were as follows:

Table 19**Average cif prices of asparagus imported into Switzerland**

Fr/kg

| | 1969 | 1970 | 1971 | 1972 | 1973 |
|------------|-------|------|------|------|------|
| All source | 3.87 | 4.16 | 3.83 | 4.90 | 4.83 |
| France | 4.05 | 4.30 | 3.96 | 5.10 | 4.91 |
| Italy | 2.44 | 2.66 | 2.46 | 2.87 | 3.75 |
| Tunisia | — | 5.69 | 4.06 | 3.61 | — |
| USA | 17.01 | 7.61 | — | — | 6.85 |

— no price quoted

Source: derived from official trade returns

All source prices fluctuated showing a large rise between 1971 and 1972, but no definite trend can be seen. French asparagus always fetches a much higher price than Italian asparagus, perhaps reflecting quality differences. The price paid for Tunisian asparagus fell, markedly between 1970 and 1972, when it fetched a lower price than the French asparagus. Prices for asparagus from the USA have also declined — the strength of the Swiss currency may have had an effect — although they were still above those of all the other suppliers in 1973. It appears that there is not a particularly high premium attached to air-freighted asparagus in Switzerland.

SWEDEN**Annual Imports**

As can be seen from Table 20 imports have fluctuated over the years but are usually under 50 tonnes per annum.

Table 20**Imports of asparagus into Sweden**

| | | 1964/68 Average | 1969 | 1970 | 1971 | 1972 | 1973 |
|-------------------------|-------------------|--------------------|-----------|-----------|----------|----------|-----------|
| 1 May – 30 June | tonnes '000 Kr | 22 84 | 32 121 | 46 166 | 20 70 | 6 37 | 25 111 |
| 1 July – 30 April | tonnes '000 Kr | 6 39 | 8 57 | 5 42 | 3 21 | 7 50 | 4 43 |
| Total of which from: | tonnes '000 Kr | 28 123 | 40 178 | 51 208 | 23 91 | 13 87 | 29 154 |
| France | tonnes '000 Kr | 6 34 | 3 17 | — — | 4 23 | 3 27 | 1 17 |
| Hungary | tonnes '000 Kr | 17 53 | 29 105 | 42 140 | 13 33 | — — | 19 74 |
| Poland | tonnes '000 Kr | — — | — — | — — | 2 10 | 2 12 | 3 17 |
| USA | tonnes '000 Kr | — 3 | 6 35 | 2 16 | — — | — — | 2 14 |
| Other Countries | tonnes '000 Kr | 5 33 | 2 21 | 7 52 | 4 25 | 8 48 | 4 32 |

— nil or negligible

Source: *Sveriges Inforsel Och Utforsele*. Statistiska Centralbyran.

Apart from 1972, Hungary was the main supplier to this market, accounting for between 57% and 82% of the total, 1969/73. France and Poland also send small quantities to Sweden. The USA is again the main supplier of air-freighted asparagus — but this trade is not yet well-established.

Seasonality of supply

Most asparagus is imported in May and June with European countries the main suppliers. Supplies from the USA usually arrive between January and the beginning of May.

Prices

Table 21 shows the average cif price over the last five years.

Table 21

Average cif prices of asparagus imported into Sweden

| | Kr/kg | | | | |
|-------------------|-------|------|------|------|-------|
| | 1969 | 1970 | 1971 | 1972 | 1973 |
| 1 May – 30 June | 3.78 | 3.61 | 3.50 | 6.17 | 4.44 |
| 1 July – 30 April | 7.13 | 8.40 | 7.00 | 7.14 | 10.75 |
| Hungary | 3.62 | 3.33 | 2.54 | — | 3.89 |
| France | 5.67 | — | 5.75 | 9.00 | 17.00 |
| USA | 5.83 | 8.00 | — | — | 7.00 |

— no price quoted

Source: derived from official trade returns

Apart from 1972, when the prices were fairly close, there is a clear differential between the in-season and out-of-season price — the out-of-season price usually being twice as high. Prices in the season were particularly high in 1972 and in the out-of-season high in 1973. Hungarian asparagus fetches low prices, whereas French asparagus is very highly priced, reflecting its superior quality. Asparagus from the USA does not fetch a high price, presumably because this asparagus is green and the Swedes prefer white.

INTER-COUNTRY COMPARISON OF CIF IMPORT PRICES FOR AIR-FREIGHTED ASPARAGUS

So far all the price data presented in this report for importing countries have, for reasons given in the note on page vi, been in national currencies. This has, of course, precluded any inter-country price comparisons but as exporters no doubt wish to supply the more remunerative markets, if such exist, Table 22 has been prepared to show the 1973 import price for the major supplier of air-freighted asparagus to each of the countries in question, using a standardised unit. The standardised price unit used is Sterling — pence per kilogramme. Unfortunately neither Belgium nor the Netherlands give sufficient detail in their Trade Returns for these markets to be included in such a comparison, and most other countries only show one or two suppliers of air-freighted asparagus so the scope of the analysis is somewhat limited.

It should be borne in mind that average import prices may not in fact be very good indicators of price level for goods imported on consignment if adjustments, following final sale, to importers' initial estimates are not fully provided for nor taken into account in the final rendering of the Trade Returns. However, in the absence of comprehensive wholesale price data, average import prices are the best data available.

Air-freighted asparagus is necessarily a high value commodity as air-freight costs comprise a large proportion of the total, but there are considerable differences between prices paid on the various markets for asparagus from the same source. High prices are paid on both the French and German markets — the price in Germany is to some extent a reflection of the high freight costs, but the price in France is probably more a reflection of the high quality of imported asparagus. Among those countries importing asparagus from the USA by far the highest price

is received in the United Kingdom. On this market asparagus is highly priced all year round and it is regarded as a "luxury" item for which people are prepared to pay top prices. The lowest price for asparagus from the USA was made in Sweden – only 66p/kg; possibly because the Swedes prefer a white asparagus and not the green as supplied by the USA. Although the Italian price for 1973 is somewhat higher than in the two previous years the Italian market is still the second lowest priced of those considered.

Table 22
Cif import prices for various European countries in 1973 on a standardised basis

| | p/kg |
|-----------------------------|--------------------|
| | USA |
| Federal Republic of Germany | 137 (South Africa) |
| United Kingdom | 156 |
| Italy | 80 |
| Denmark | 96 |
| France | 146 (Morocco) |
| Switzerland | 88 |
| Sweden | 66 |

Source: derived from official trade returns

Quality requirements

VARIETIES

Although varietal differences cannot be clearly defined, asparagus varieties can be divided into two general types based on the colour of the spears. Mary Washington, Martha Washington, Argenteuil, Giant French and Reading Giant are varieties of asparagus whose spears become dark green on exposure to sunlight; Connover's Colossal, Mammoth White and White German asparagus are examples of types which produce light green or whitish spears above ground. These light coloured varieties should not be mistaken for white asparagus which can be produced from either the light green or dark green types through blanching, a process which involves ridging the soil over the crowns. In the UK the preference is for green asparagus; white asparagus is produced much more extensively and is preferred on the Continent. Nevertheless, in the absence of white asparagus the green type is accepted by some European markets; Italy, Switzerland and Sweden all import green asparagus from the USA. There also exist preferences in relation to the shape of the tip; varieties selected and grown in Germany, for example, have retained the characteristic rounded tip whereas the French have selected types with more pointed tips to the spear.

HARVESTING

Asparagus should be harvested when the bud scales are compact; the spears should be cut cleanly and vertically to the axis of the stalk although slight bevelling is permitted to improve the appearance of the final pack. There is a loss in tenderness and flavour after asparagus has been harvested; this is accelerated at high temperatures. Asparagus must therefore be moved from the field, bunched, packed and placed in a cool atmosphere as soon as possible after it is cut. The spears should be protected from the sun as much as possible if they are harvested during very warm weather.

STORAGE

Fresh asparagus may be held for a limited period in store. Following cutting it may be advantageous to pre-cool the spears as deterioration occurs more rapidly at temperatures above 40°F (4.4°C). Asparagus may be stored at a temperature of 36°F (2.2°C) for up to three weeks. Where storage is for ten days or less, a temperature of 32°F (0°C) can be recommended; it is reported by some sources that if asparagus is held for longer at this temperature it can be subject to chilling injury. A high relative humidity should be maintained in store to prevent excessive moisture loss.

GRADING

The EEC standard for asparagus is given in Appendix B; it was adopted in the United Kingdom on February 1, 1974. All countries exporting to EEC countries must adhere to this standard. Within the standard drawn up the minimum requirements for all classes of asparagus must be: whole, fresh in appearance and smell, sound, free from pest damage, practically unbruised, clean and free from excessive external moisture. The condition of the produce must be such that it can withstand handling and transport and meet market requirements at its destination. The asparagus must not have been soaked subsequent to harvest to preserve or restore freshness. Pre-cooling is however permitted.

Additional requirements for quality class selection relate to such factors as shape, size, colour etc.

PACKING

Although the wholesale markets prefer bundles, shoots may be marketed either in bundles or loose and in a variety of containers. Bundled asparagus is packed to weights of 1 kg or 500 gm. The produce must be adequately protected to preserve its freshness, to prevent damage and to keep it clean.

The bundles are often wrapped in parchment paper or cellophane with only the tips and base showing; this both improves the appearance of the asparagus and provides some protection from mechanical injury for the spears during transit. The sleeves form an ideal medium for displaying trade marks and brand names.

Californian exporters use a pyramidal container for air-freighting asparagus to Europe: (16 lb capacity), the shape of which suits the taper of asparagus when packed upright. A similar container has been developed by Mexico. Until recently only wood was used; however, an increasing quantity of supplies are being received in Europe packed in fibreboard pyramidal containers.

Other exporting countries, eg South Africa, Kenya and New Zealand use single layer fibreboard cartons. The bundles, individually wrapped, may be placed crown to tail along the length of the container or in the case of some suppliers, such as New Zealand, the shoots are packed loose in fibreboard pre-packs, 5 or 6 pre-packs of 500 gm per single layer carton. Overheating can occur where asparagus is too densely packed and where ventilation is restricted. French asparagus is packed loose in 5 kg wooden boxes with cellophane covers; as far as the UK is concerned, this type of pack is more suitable for the hotel and restaurant trade.

Tariffs and phyto-sanitary regulations

IMPORT TARIFFS

Tariffs charged on asparagus imported into the countries surveyed in this report were as follows on 1st January 1975:

| | <i>Period</i> | <i>General rate</i> | <i>Exceptions</i> |
|-----------------------|------------------|---------------------------|---|
| EEC (Original Six) | All year | 16% <i>ad valorem</i> | Associated Territories – Free. Morocco –Free within a quota allowance. |
| UK | 16 April–30 June | 6.4% + £3.3069 per 100 kg | £M–£3.3069 per 100 kg C_1 , whichever is the greater of 6.8% or 0.80UA per 100 kg. C_2 Free. |
| | 1 July–15 April | 12.4% <i>ad valorem</i> | Associated Territories £5.5115 per 100 kg or Full. M –6% C_1 , 6.4% C_2 Free Associated Territories 10% |

Notes: M rate applies to existing EEC members.

C_1 rate applies to produce coming from the Commonwealth Preference Area.

C_2 rate applies to produce coming from the Commonwealth countries who are eligible to negotiate status with the EEC.

Associated States rate applies to these countries who had free entry into the original EEC under the Yaounde agreement.

| | <i>Period</i> | <i>General rate</i> | <i>Exceptions</i> |
|-------------|-----------------|-------------------------|---------------------|
| Denmark | 1 May–15 May | 10.9% <i>ad valorem</i> | EEC countries 4.5% |
| | 16 May–30 June | 24.4% <i>ad valorem</i> | EEC countries 18.0% |
| | 1 July–30 April | 6.4% <i>ad valorem</i> | EEC countries Free |
| Switzerland | All year | 7 Fr/100 kg gross | — |
| Sweden | 1 May–30 June | 100 kg/100 kg net | — |
| | 1 July–30 April | Free | — |

Denmark and the UK are bringing their tariffs into alignment with the EEC tariff of 16% and full harmonisation will be reached on 1st January 1978. On that date the only countries having free access to the Danish and UK markets will be other EEC members; with the exception of Morocco all other suppliers to the enlarged EEC will have to pay the full rate as there is no tariff reduction for asparagus under either the Lomé Convention or under the Generalised System of Preferences.

The EEC is negotiating agreements with her trading partners in the Mediterranean, including Morocco. The only agreement published so far is that for Israel and no concessions were granted to asparagus.

It is appropriate at this stage to discuss the possible effects in the UK market of the new tariff structure resulting from her entry into the EEC. This discussion relates to the final situation, rather than the transitional period.

1. EEC countries who export asparagus, notably France, Italy and the Netherlands, will face no tariff barrier and will have better prospects on the UK market. Any third countries hoping to supply this market in May/June will face severe competition from EEC producers and so it would be inadvisable for them to send supplies at this time of the year.
2. Countries, eg USA, Mexico, at present paying the 10% tariff will have to pay the increased rate of 16% but in view of the general inflationary situation it is not felt that this will make much difference to demand.
3. Commonwealth countries will lose their tariff advantage and will be competing on equal terms with all suppliers outside the EEC (Morocco excepted at present). It is possible that some present Commonwealth suppliers will find the UK market unremunerative in the future and supplies from near non-European countries, such as Tunisia, may increase.

PHYTO-SANITARY REGULATIONS

Asparagus is not subject to any specific phyto-sanitary restrictions on importation although when imported into Germany asparagus, like other produce, must be free of certain chemical residues.¹

¹ German regulation on plant protectants, pesticides and storage protectants in or on foods of vegetable origin.
Produced by the Federal Ministries of Health and of Food, Agriculture and Forestry 30 November 1966.

Prospects

Asparagus is only "in season" for about two months of the year in any of the countries under consideration and it might therefore be thought that an opportunity exists for supplying to these countries in the out-of-season period. However, from the evidence available it appears that in most countries there does not exist a large demand for out-of-season asparagus.

Several reasons can be put forward for this lack of demand. In most countries there is considerable domestic production of relatively low priced asparagus and consequently it is consumed in season by a wide public, including relatively low wage or salary earners, and sold in many retail outlets. Clearly the bulk of these consumers would be unable to pay the high prices that would prevail for asparagus imported in the winter and it seems that those people whose earnings are high enough have not shown sufficient interest to encourage importers to take the risks involved. Indeed in most countries with a sizeable consumption fresh asparagus seems to have the image of "a seasonal treat". There is a very limited production of forced asparagus in the winter in both France and Belgium which meets nearly all the demand of the few consumers who are prepared to pay a high price for the vegetable and the domestic season is also anticipated to a limited extent by supplies obtained from North African countries, notably Tunisia. In the out-of-season period there are plentiful supplies of canned asparagus which is much cheaper than air-freighted fresh asparagus and is a very acceptable substitute.

These factors have meant that there is very little demand in most European countries for out-of-season asparagus and this situation is likely to remain unaltered.

However, there are two relatively large markets for air-freighted asparagus; the UK and Italy. The Italian market has shown considerable growth over the years. However, the USA is virtually the only supplier to this market and import prices are not very high. The prospects for a new supplier to the Italian market are not thought to be very encouraging.

In the UK there is quite a large out-of-season demand for asparagus. This is somewhat surprising in view of the small consumption of asparagus overall — consumption of fresh asparagus (domestic production plus imports) is about 1 000 tonnes per annum and canned, which depends entirely on imports, is between 2 000 and 3 000 tonnes per year. The consuming public is small and sales are confined mainly to luxury hotels, restaurants and high class fruiterers, regardless of the time of year. Even in the domestic season prices of fresh asparagus are high and sales are virtually confined to the gourmet who is also able to afford high prices; he is apparently prepared to pay the even higher winter-time prices for imported produce. Another reason for the high level of out-of-season imports may be the importance of London as a commercial centre and the associated entertaining. Although this market is dominated by supplies from the USA, small quantities do come from other supplying countries and there is a slight gap in supplies between September and December, which a new supplier could fill.

List of importers

Note: The following list gives the names of some of the firms which are known to the Tropical Products Institute to be trading in this commodity, but the list should not be regarded as exhaustive. Inclusion in the list does not imply that TPI has any knowledge of the financial standing of the firms.

FEDERAL REPUBLIC OF GERMANY Griffin and Brand (European) Ltd
77 Brushfield Street
London E1

Harder, Meiser & Co
28 Breitenweg
Bremen

T J Poupart Ltd
D153–162 Fruit and Vegetable Market
New Covent Garden Market
London SW8

BELGIUM/LUXEMBOURG

Lecoq
19 Boulevard d'Ypres
Brussels

Ridley and Houlding Ltd
C148–150 Fruit and Vegetable Market
New Covent Garden Market
London SW8

John van Haecht
11 rue de Lauwers
Hoeilaart
Brussels

J O Sims Ltd
Winchester Walk
Borough Market
London SE1 9AQ

Unifruit
27 Boulevard d'Ypres
Brussels

DENMARK

UNITED KINGDOM

American Fruit Importers Ltd.,
Stands 1–7, Trading Hall No. 1
Western International Market
Hayes Road
Southall,
Middlesex

Th. Olesen
Frugtmarkeds 1
Copenhagen
DK 2500 Valby

Broome and Green (London) Ltd.,
A165–170 Fruit and Vegetable Market
New Covent Garden Market
London SW8

Ets E Azoulay et Cie
2 rue des Tropiques
CIDEX E-108
94538 Rungis

Francis Nicholls Group
London Fruit Exchange
Spitalfields
London E1 6HG

Societe Pomona
36 rue d'Angers
Min de Paris–Rungis
(94) Rungis

NETHERLANDS

Jan de Geus NV
Central Market
Hal 9-13
Amsterdam

SWEDEN

ICA Frukt Och Grönsaker AB
5 Faktmastaregaten
Helsingborg

Moller & Co AB
23-25 Importorvagen
S-121 73 Johanneshov
Stockholm

S J Norman AB
5 Styrmansgatan
Stockholm 15

SWITZERLAND

J Berri
67 Sihlquai
8005 Zurich

G Helfer
74 Grand Rue
1110 Morges

Common standards of quality for asparagus

I. DEFINITION OF PRODUCT

This standard relates to the stems of "*Asparagus officinalis L.*" for supply to the consumer fresh, excluding asparagus for processing.

Asparagus is classified in three groups according to colour:

1. White asparagus
2. Purple asparagus (the tip being pink to violet or purple in colour)
3. Green asparagus (the tip and part of the stem being green in colour). "This standard does not apply to asparagus of less than 10 mm in respect of diameter, put up in homogeneous batches."

II. QUALITY SPECIFICATION

A. General

The purpose of the standard is to define quality requirements for asparagus at the despatching stage, after preparation and packaging.

B. Minimum requirements

The asparagus must be:

- whole;
- of fresh appearance and smell;
- sound;
- free from damage by rodents or infestation by insects;
- practically free from bruising;
- clean, that is, practically free from soil or dirt of any other kind;
- free from excessive external moisture, that is, adequately dried after washing, if any (washing of stems being permitted but not steeping);
- free from foreign taste or smell.

The stems must as far as possible be cut off clean at the base, at right angles to the stem.

The asparagus must have undergone no treatment after gathering, other than chilling to preserve or restore its fresh appearance.

Furthermore, the stems must not be hollow nor split nor stripped nor broken. Small cracks occurring after gathering are allowed, however, provided they do not exceed the maxima set out under the heading "Tolerances". The condition of the produce must be such that it can withstand transport and handling and meet commercial requirements at the place of destination.

C. Classification

(i) "Extra" Class

Asparagus stems in this class must be well shaped and practically straight. Allowing for the normal characteristics of the group to which they belong, they must be very tight-tipped.

Only very slight traces of rust are permitted, subject to their being removable in normal scraping by the consumer.

In the white asparagus group, the tips and stems must be white; only a slight pinkish tinge appearing after gathering is tolerated on the stems.

For white and purple asparagus, no incipient woodiness is permitted; for green asparagus, slight incipient woodiness is permitted.

For more attractive presentation, where asparagus is put up in bundles, the outer stems in the bundle may be cut at a slightly bevelled angle reaching not more than 1 cm up the stem.

(ii) Class I

Asparagus stems in this class must be well shaped.

They may be slightly bent.

Allowing for the normal characteristics of the group to which they belong, they must be tight-tipped.

Slight traces of rust are permitted, subject to their being removable in normal scraping by the consumer.

In the white asparagus group, stems are allowed with tips slightly tinged before gathering and stems in which a pink colour has appeared after gathering, in so far as such colouration disappears in cooking.

In the white asparagus group, woody stems are not allowed. In the purple and green asparagus groups, the stems may show incipient woodiness.

(iii) Class II

As compared with the preceding class, the stems may be less well shaped, more bent and less tight-tipped.

Traces of rust are permitted, subject to their being removable by scraping.

The stems may be slightly woody.

The tips of white asparagus may be coloured, except green.

III. SIZING

Sizing is determined by length and diameter.

A. Sizing by length

The length of the stems must be:

- between 17 and 22 cm for long asparagus,
- between 12 and 17 cm for short asparagus,
- between 12 and 22 cm for Class II asparagus put up in layers, not bundled,
- less than 12 cm for "asparagus tips".

However, green asparagus stems may be up to 27 cm maximum length provided that at least one-third of their length is green coloured.

B. Sizing by diameter

The diameter of the stems is the diameter of the cross-section midway along the length.

Minimum diameters and the relevant sizes are as set out hereunder:

| Class | Minimum diameter | | Size |
|-------|------------------|-------------|--|
| Extra | 12 mm | 12 to 16 mm | 16 mm and over, with maximum disparity 8 mm within any one package or bundle. |
| I | 10 mm | 10 to 16 mm | 16 mm and over, with maximum disparity 10 mm within any one package or bundle. |
| II | 10 mm | | No uniformity prescribed. |

IV. TOLERANCES

Tolerances in respect of quality and size are allowed in each package for produce not satisfying the requirements for its class.

A. Quality tolerances

(i) "Extra" Class

5% by weight or by number of stems not satisfying the requirements for "Extra" Class but satisfying those for Class I, or with slight unhealed cracks occurring after gathering.

(ii) Class I

10% by weight or by number of stems not satisfying the requirements for Class I but satisfying those for Class II, or with slight unhealed cracks occurring after gathering.

(iii) Class II

10% by weight or by number of stems not satisfying the requirements for Class II, but fit for human consumption.

B. Size tolerances

10% by weight or by number of stems varying from the limits set, the maximum disparity not to exceed 1 cm in respect of length and 2 mm in respect of diameter, however.

V. PACKAGING AND PRESENTATION

A. Uniformity

The contents of each package or each bundle in any one package must be uniform and must include only stems of the same class, colour group and size, insofar in respect of the latter criterion as grading for size is required.

However, stems not conforming in colour are permitted up to the following maxima:

- in white asparagus: 10% of purple asparagus.
- in purple or green asparagus: 10% differing in colour.

B. Packaging

Packaging must be such as to give the produce suitable protection.

Any paper or other material used inside the package must be new and harmless to human food. When printed matter is used, the printing must be on the outside only, so as not to come into contact with the produce.

The produce when packaged must be free from any foreign bodies.

Asparagus may be put up in one of the following ways:

- (i) In bundles (firmly tied) of 0.5, 1 or 2 kg.

The stems in the outer row of each bundle must correspond in appearance and dimensions with the average of those contained in the bundle.

Asparagus put up in this way must be of uniform length.

The bundles must be arranged in even layers within the package; each bundle may be protected by paper.

The bundles in any one package must be of uniform weight and length.

- (ii) Layered in the package, not bundled.

VI. MARKING

Each package must bear the following particulars legibly and indelibly marked on the outside:

A. Identification

Packer } Name and address or code mark.
Despatcher }

B. Nature of produce

"Asparagus" plus the word "white", "purple" or "green" when the contents of the package are not visible, together with the word "short" or "tips" where applicable.

C. Origin of produce

District of origin, or national, regional or local trade name.

D. Commercial Specifications

- Class
- Size: maximum and minimum diameter of stems or the words "not graded for size"
- number of bundles and weight per bundle where put up in bundles.

E. Official control mark (optional)

CLASS III

This class consists of products of marketable quality which cannot be classified in a high class, but which satisfy the requirements defined below.

Quality requirements

Asparagus in Class III must satisfy the requirements laid down in the common standard for Class II. However the tips may be slightly open and the tips of white asparagus may have a slight colouring, including pale green.

In addition, the cut at the base of the stem may be oblique in relation to the vertical.

Sizing

The provisions laid down for Class II in Title III of the common standards shall apply to asparagus in Class III.

Tolerances

Each package may contain at most:—

15% by weight or number of stems which do not satisfy the requirements of the class including the minimum requirements for such products. However such products must be of marketable quality and be suitable for consumption.

10% by weight or number of stems which do not comply with the rules fixed for sizing.

Packaging and presentation

A. Homogeneity

In each of the colour groups, a maximum of 10% of stems of another colour is permitted.

Camouflage is not permitted, that is to say that the visible part must correspond to the average composition of the goods.

B. Packaging

The provisions laid down in Title V B of the common standards shall apply to asparagus in Class III.

Marking

The provisions laid down in Title VI of the common standards shall apply to asparagus in Class III.

Source: *European Communities Secondary Legislation Part 28. Fruit and Vegetables Section 1 and 2. HMSO.*



